ESX Server 3 Patch Management Guide

ESX Server 3.0.3 and ESX Server 3.5

vmware®

ESX Server 3 Patch Management Guide
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About This Book

This book, *ESX Server 3 Patch Management Guide,* provides background information on processing patches for ESX Server 3.0.3 and ESX Server 3.5 hosts and describes how to use the esxupdate utility to apply software updates and to track software installed on ESX Server 3.0.3 and ESX Server 3.5 hosts.

This book provides information specific to ESX Server 3.0.3 and ESX Server 3.5 hosts and the esxupdate utility. It does *not* discuss the following:

- How to patch ESX Server 3.0.3 and ESX Server 3.5 hosts automatically with the VMware Update Service and the VMware Update Manager. For information on these tools, see "ESX Server Patch Management Tools" on page 42.

- How to patch ESX Server 3i hosts with the vihostupdate remote command line interface (remote CLI). For information on vihostupdate, see "ESX Server Patch Management Tools" on page 42.

- How to patch ESX Servers released prior to version 3.0.3 or 3.5. For information on this process, see the *Patch Management for ESX Servers* tech note.

- How to upgrade ESX Server hosts. For information on upgrading, see the *Upgrade Guide.* For a list of VMware release definitions, see "VMware Release Terminology" on page 41.

NOTE You must have a valid VMware product license to download VMware patches.

Intended Audience

This manual is intended for anyone who needs to manually apply patches to ESX Server 3.0.3 and ESX Server 3.5 hosts. The information in this manual is written for system administrators who manage ESX Servers by using a service console.

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VMware Infrastructure Documentation

The VMware Infrastructure documentation consists of the combined VirtualCenter and ESX Server documentation set.

Technical Support and Education Resources

The following sections describe the technical support resources available to you. You can access the most current versions of this manual and other books by going to:

http://www.vmware.com/support/pubs

Online and Telephone Support

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.html.

Support Offerings

Find out how VMware support offerings can help meet your business needs. Go to http://www.vmware.com/support/services.

VMware Education Services

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Managing Patches for ESX Server 3.0.3 and ESX Server 3.5 Hosts

Introduction to Patch Processing

VMware patches for ESX Server 3.0.3 and ESX Server 3.5 hosts are located at the VMware Infrastructure Download Center (http://www.vmware.com/download/vi). Patches are named according to their product, version, release date, and patch classification, and are valid only for a particular ESX Server version. For example, you cannot apply an ESX Server 3.0.2 patch to an ESX Server 3.0.3 or an ESX Server 3.5 host. For more information on the VMware release terminology and patch naming convention, see "About Patches" on page 8.

Each ESX Server 3.0.3 and ESX Server 3.5 version has a *contents.zip* file, which is also located at the VMware Infrastructure Download Center. This file contains a secure list of all patches released for a specific ESX Server version, and is vital to the patching process. The patching utility uses it to authenticate downloaded patches and to handle dependency issues. For more information on the contents file, see "About Patch Repositories and Patch Depots" on page 10.

Each VMware patch is packaged as a `.zip` file that contains either a *bundle* or a *roll-up*. A bundle is a set of metadata files and RPM packages for a specific fix or update to an ESX Server 3.0.3 or an ESX Server 3.5 host. A roll-up is an aggregate bundle, or "super bundle", that groups together a set of single bundles. Roll-ups provide you with a convenient way to download and install multiple bundles at one time. VMware suggests you patch your ESX Server 3.0.3 or ESX Server 3.5 hosts by downloading roll-ups and installing the bundles necessary for your environment. This ensures that all bundle-to-bundle dependencies can be handled during installation.

Each roll-up contains all bundles released from the latest maintenance or update release. For example, VMware may release the following, in order:

- Maintenance release.
- 5 individual bundles, released over time.
- 1 roll-up, which packages the 5 bundles released since the maintenance release.
- 5 individual bundles, released over time.
- 1 roll-up, which packages the 10 bundles released since the maintenance release.
- Update release.
- 5 individual bundles, released over time.
- 1 roll-up, which packages the 5 bundles released since the update release.

For information on release terminology, see "VMware Release Terminology" on page 41. For information on how to install roll-ups and individual bundles, see "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29.

About Patches

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

ESX Server 3.0.3 and ESX Server 3.5 patches use the following naming convention:

`<ProductName><VersionNumber>-<BundleID>-<Classification><SupportLevel>`

Where:

- `ProductName` is ESX or ESXe. ESX denotes ESX Server 3 and ESXe denotes ESX Server 3i Embedded.

- `VersionNumber` is the ESX Server version, for example, 3.5.0.

- `BundleID` is a unique ID comprised of the year and month the bundle was released and a 3-digit unique ID. It is in the format YYYYMM###. For example, the first patch released in January 2008 might have a `BundleID` of `200801001`.

- `Classification` is one of:

  - B – Bug

    Bug patches fix minor flaws that affect product functionality or behavior. Bug patches are optional. Before you apply them, determine whether they are necessary for your environment.

- U – Update

  Update patches can contain new driver updates and small non-intrusive enhancements. Update patches are optional. Before you apply them, determine whether they are necessary for your installation.

- S – Security

  Security patches fix one or more potential security vulnerabilities in the product. They should be implemented immediately to prevent the vulnerabilities from being exploited.

- R – Roll-up

  Roll-up patches contain any number of bundles for ESX Server 3.0.3 or ESX Server 3.5 hosts. They can contain bug patches, update patches, and security patches. They do *not* contain upgrade bundles for minor releases or update bundles for maintenance releases.

- SupportLevel is one of:

  - G – GA Patch

    GA patches are released to all customers and have been thoroughly tested. They contain fixes for ESX Server 3 software issues.

  - H – Hot Patch

    Hot patches are released to specific customers for solving critical problems specific to their environment. They contain fixes for security issues or problems that can potentially cause data loss or severe service disruptions. Hot patches should be implemented immediately.

  - D – Debugging Patch

    Debugging patches are released to all customers and are used by VMware to troubleshoot complex product issues. They can contain debug messages and code, and drivers. Debugging patches usually require VMware assistance to install.

  - C – Custom Patch

    Custom patches are special fixes provided to a customer. They are usually specific to customer's environment, and are most likely not required by customers not reporting the issue. Custom patches have been tested in the customer's environment.

For example, the bundle "ESX350–200801123–SH.zip" is for ESX Server 3.5, released in January 2008. It contains a security fix (S) provided as a hot patch (H). For information on ESX Server 3i patch naming, see the *ESX Server 3i Setup Guide*.

Patches do not have installation wizards. You install them with a patch update tool. The patch update tool for ESX Server 3.0.3 and ESX Server 3.5 hosts is *esxupdate*. For information about patch update tools for other ESX Server versions, See "ESX Server Patch Management Tools" on page 42.

About Patch Repositories and Patch Depots

A patch repository is a directory you set up to contain the ESX Server patches and contents file you download from VMware, Inc. If you have multiple ESX Server 3.0.3 or ESX Server 3.5 hosts in your environment, VMware recommends you create your patch repository on a local system that acts as an HTTP or FTP server or on an NFS share so all hosts can share the same repository.

NOTE   If you have only one ESX Server 3.0.3 or ESX Server 3.5 host in your environment, you can create the repository on that system; however, VMware does not recommend it because the root partition has limited storage.

After you setup up a patch repository, you create *depots*, which are directories into which you extract the contents and patch .zip files. You can create any number of depots in your repository. For example, if your environment is comprised of ESX Server 3.0.1 hosts, ESX Server 3.0.3 hosts, ESX Server 3.5 hosts, and ESX Server 3i hosts, you should create a separate depot for each version.

The patch maintenance utility, esxupdate, uses the depot to determine which bundles are applicable to your ESX Server 3.0.3 or ESX Server 3.5 host and to install multiple bundles at one time.

About extracting bundle.zip files

When you extract a *bundle* into a depot, a folder is created with the bundle ID and contains the following elements:

- A contents.xml file for the bundle, which contains a reference to the bundle's descriptor.xml file and a list of every RPM package and its associated signature.

- A contents.xml.sig file, which is a detached GPG signature of the contents file. This is used to validate the contents file for integrity.

- A descriptor.xml file, which contains information about a bundle, including a summary of the fix, dependency details, and RPM details. esxupdate uses the

descriptor file to determine how to handle bundle or system dependencies and to determine which bundles and RPMs are applicable to the host system.

- The RPM software packages.

- A directory for the header files.

About extracting roll-up.zip files

When you extract a *roll-up* into the depot, the following items are added to the depot:

- A folder for the roll-up bundle, named with the roll-up ID, containing a `contents.xml`, `contents.xml.sig`, and `descriptor.xml` file for the roll-up.

- A folder for each individual bundle in the roll-up, named with the bundle ID. Each bundle folder contains a descriptor file, a contents file, a contents signature file, and the RPM software packages.

For example, say you have a depot named ESX350. You download and extract the `contents.zip` file and a roll-up "`ESX350-Rollup-01.zip`". If the roll-up contains 2 bundles, "`ESX350-200801001-BG`", and "`ESX350-200801002-BG`", the depot will contain three folders—one for the roll-up and one for each bundle:

```
/VMware_Patches <----Patch repository
    /ESX350 <----Depot
        contents.xml
        contents.xml.sig
        /ESX350-200801003-RG <----Roll-up folder
            contents.xml
            contents.xml.sig
            descriptor.xml
        /ESX350-200801001-BG <----Bundle folder
            contents.xml
            contents.xml.sig
            descriptor.xml
            headers/
            VMware-esx-vmkernel-3.5.0-65312.i386.rpm
        /ESX350-200801002-BG <----Bundle folder
            contents.xml
            contents.xml.sig
            descriptor.xml
            headers/
            VMware-esx-apps-3.5.0-65312.i386.rpm
```

For more information on bundle dependencies, see "About Bundle Dependencies" on page 13. For information on creating patch depots, see "Setting up Patch Depots" on page 19.

About the esxupdate Utility

You use the patch maintenance utility, `esxupdate`, to retrieve information about VMware bundles, to track installed software, and to apply software packages to ESX Server 3.0.3 or ESX Server 3.5 hosts. You run esxupdate from the service console while you are logged on to an ESX Server 3.0.3 or ESX Server 3.5 host as user `root`. You can run only one instance at a time on the same ESX Server 3.0.3 or ESX Server 3.5 host.

A record of each installed bundle is written to the `/etc/vmware/patchdb` directory on the host. The record includes the bundle ID, the installation time, the RPMs 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 38.

For ESX Server 3.0.3 and ESX Server 3.5 hosts, there are four basic modes of `esxupdate`: *Inspection mode*, *scan mode*, *test mode*, and *update mode*.

■ *Inspection mode* queries your system for bundles and bundle details. There are two commands you use to retrieve bundle information: esxupdate `query` and esxupdate `info`.

  ■ Use the esxupdate `query` command to display a list of bundles installed on ESX Server 3.0.3 or ESX Server 3.5 host. The output lists the bundles in ascending installation order, and includes the bundle name, installation date, and a 40-character summary of the bundle. Bundles that have been superseded by another bundle, and therefore obsolete, are not listed.

  ■ Use the esxupdate `info` command to display information the contents of one or more bundles. The output includes the bundle name, release date, and details about the metadata files, including the RPM packages that have been installed, removed, or upgraded on an ESX Server 3.0.3 or ESX Server 3.5 host. The info command also returns information about RPM packages not handled by esxupdate, such as those that have versions not defined by VMware. This allows you to track RPM packages that were installed by third-party agents.

  You can use the `info` command for both installed and uninstalled bundles. For more information, see "Retrieving Bundle Information" on page 24.

- *Scan mode* determines which bundles are applicable to the ESX Server 3.0.3 or ESX Server 3.5 host by querying the bundles in a depot and the bundles installed on the host for bundle and system dependencies. Use the esxupdate `scan` command before you install bundles to see which ones have dependencies and which ones are applicable to the host. For more information, see "About Scanning for Applicable Bundles" on page 14.

- *Test mode* enables esxupdate to go through all installation operations without installing the specified bundles. It downloads the appropriate files, pre-loads the esxupdate depot cache for HTTP and FTP servers, checks for bundle and system dependencies, and determines the bundle order and RPMs to be installed. It does not check for RPM conflicts or dependencies. For more information, see "Running a Test Install" on page 27.

- *Update mode* installs bundles on ESX Server 3.0.3 or ESX Server 3.5 hosts. Use the esxupdate `update` command to install individual bundles and roll-ups. Update mode scans the depot for dependencies and handles them, if possible, before installing. For more information, see "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29.

For information on esxupdate syntax and commands, see "esxupdate Options and Commands" on page 33

About Bundle Dependencies

The descriptor file for each bundle contains a dependencies section that defines bundle dependencies and system state dependencies for each bundle. esxupdate uses this file when you update an ESX Server 3.0.3 or ESX Server 3.5 host.

Bundle dependencies include bundles that are required by the bundle, obsoleted by the bundle, or in conflict with the bundle. The system state dependencies include whether a system reboot, a `hostd` restart, or maintenance mode for virtual machines is required for a bundle. In addition, esxupdate checks that the bundle is for the correct version of the ESX Server 3.0.3 or ESX Server 3.5 and that there is enough disk space to perform the installation.

If esxupdate can resolve all dependencies, it installs all required bundles.

NOTE If a reboot is required in the middle of a multi-bundle installation (for example, if a specific bundle requires another bundle to already be installed), esxupdate will reboot the host automatically if you did not specify the −−noreboot option. After the host is back online, you can rerun the same esxupdate command to complete the installation process. For information on the −−noreboot option, see "**−−noreboot**" on page 35.

If esxupdate can't resolve all dependencies, it exits without performing the installation. In such cases, you must manually resolve the dependencies before running the update again. For example, if a bundle requires that virtual machines must be in maintenance mode and they are powered on, you must power them off before updating the host. For a list of dependency flags, see "About Scanning for Applicable Bundles" on page 14.

For more information on dependency checking, see "About Scanning for Applicable Bundles" on page 14.

About Scanning for Applicable Bundles

To determine which bundles in your depot are applicable to your ESX Server 3.0.3 or ESX Server 3.5 host, use the esxupdate scan command. This command validates all patch signatures and checks each bundle for release-specific dependencies, obsolete bundle dependencies, and system state dependencies to determine what patches to install and in what order. If you are performing a multi-bundle installation, you can use this command to see how the esxupdate update command will process bundles when you perform the install.

In addition, you can use the applicability flags (AppFlgs) and install flags (iFlgs) returned by the scan to help you check for errors in the depot and to analyze the amount of system down time is required to complete the installation.

When you scan a depot, the following information is returned in the console window for each bundle:

■ The bundle ID.

■ Whether the bundle is missing from the depot or is not applicable. In such cases, the bundle is displayed with one of the following applicability flags:

Table 1. Scan Command Applicability Flags

AppFlgs	Description
i	The bundle is already installed.
r	A required bundle was returned by the scan selection and will be installed.
m	A required bundle is not in the depot and must be installed. Download the bundle so it can be installed.
c	There is a conflict between bundles. If the specified bundle conflicts with an installed bundle, it cannot be installed without removing the installed bundle. If the specified bundle conflicts with another bundle, removing the other bundle from the bundle selection will allow this bundle to be installed.

Table 1. Scan Command Applicability Flags (Continued)

AppFlgs	Description
o	The bundle has been obsoleted by another bundle in the selection and does not need to be installed. Note that esxupdate handles obsolete bundles; you do not need to remove them manually.
N	One or more files or signatures could not be validated. This indicates an unauthenticated bundle.
v	This bundle requires the ESX Server 3.0.3 or ESX Server 3.5 host to be in maintenance mode, and at lease one virtual machine is powered on.

To retrieve the reason why a bundle is not applicable, run the scan command with the −−explain option.

■ A brief summary of the bundle.

■ One of the following host installation flags (iFlag):

Table 2. Scan Command Installation Flags

iFlag	Description
r	Reboot required.
m	Maintenance mode required.
h	Host agent restart required.

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 in the AppFlags column of the scan output. For an example, see "Sample Output: scan Command" on page 15.

Sample Output: scan **Command**

The following example shows the information returned from an esxupdate scan command on a depot. Notice the depot contains a bug fix bundle (BG), a security fix bundle (SG), and two roll-up bundles (RG).

```
– Bundle Name –        AppFlags   ––– Summary –––                      iFlags

ESX350–200801030–BG    –––c––––    Patch for VM crashes and timeouts    –mh

ESX350–200804044–SG    –––c––––    Console OS security fix              –mh

ESX350–200801115–RG    ––––o–––    A roll–up for January 2008           ––h
```

– Bundle Name –	AppFlags	––– Summary –––	iFlags
ESX350–200811190–RG	––––––––	A roll–up for November 2008	––h

If the scan returns conflicts or dependency problems (`AppFlags`) and you want more information, run the `scan` command with the `––explain` option. For an example, see "Sample Output: `––explain scan` Command" on page 16.

Sample Output: `––explain scan` **Command**

The following example shows the information returned when you run the `esxupdate ––explain scan` command on a depot.

– Bundle Name –	AppFlags	––– Summary –––	iFlags
ESX350–200801030–BG	–––c––––	Patch for VM crashes and timeouts	–mh

[ESX350–200801030–BG] conflicts with ESX350–200804044–SG. Only one may be installed.

ESX350–200804044–SG	–––c––––	Console OS security fix	–mh

[ESX350–200804044–SG] conflicts with ESX350–200701630–BG. Only one may be installed.

ESX350–200801115–RG	––––o–––	A roll–up for January 2008	––h

[ESX350–200801115–RG] superseded by [ESX350–200811110–RG].

ESX350–200811190–RG	––––––––	A roll–up for November 2008	––h

For information on scanning a depot for dependencies, see "Scanning for Applicable Bundles" on page 22.

About Installing Bundles and Roll-ups

You use the esxupdate `update` command to install bundles and roll-ups. You can install any number of bundles at one time as long as they reside in the same depot and all dependencies are handled. When installing bundles, keep in mind the following esxupdate behavior:

- If you do not specify bundle IDs to install, esxupdate installs all applicable bundles in the depot.

- If you specify one or more bundle IDs to install, the following can happen:

  - If no dependencies exist, esxupdate installs only those bundles.

- If dependencies exist and a specified bundle requires one or more unspecified bundles to also be installed, esxupdate installs the unspecified bundles along with the specified bundles.

- If you specify a roll-up ID to install, esxupdate installs all bundles packaged in that roll-up and ignores all other bundles and roll-ups in the depot.

To ensure you have adequate disk space for the installation, the host system should have the following space available:

- A minimum of 24MB for the `/tmp` and `/boot` directories.

- A minimum of 50MB for the `/root` directory.

- In general, twice the size of the downloaded bundles.

Before you install bundles or roll-ups, scan the depot to make sure there are no bundle-to-bundle dependencies that can not be handled. For example, if you are installing a single bundle, and it is dependent on another bundle being installed, make sure both bundles are in the depot. If they are not, esxupdate cannot proceed with the installation.

During the installation process, esxupdate validates each bundle by using a set of signature keys. The `bundle.zip` files, `contents.zip` files, and all files in a bundle contain VMware signature keys. If a patch contains a missing or invalid signature, esxupdate does not consider the bundle for installation.

After validating the bundles, esxupdate performs the following tasks during the install:

- Checks for software dependencies and prerequisites, for example if the bundle is the correct ESX Server version, if virtual machines are powered off, and so forth.

- Checks the integrity of the metadata files and RPMs in each bundle.

- Orders the applicable bundles according to their dependencies and release date.

- Checks for adequate disk space.

- Removes obsolete RPMs from the ESX Server 3.0.3 or ESX Server 3.5 host.

- Installs the RPMs. RPMs installed already or superseded by a newer installed version are not installed.

- If necessary, performs system state requirements such as a system reboot or `hostd` restart.

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

For information on installing bundles, see "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29. For information on checking for patch dependencies, see "About Scanning for Applicable Bundles" on page 14.

Patch Maintenance Strategy

Use the following guidelines to manage patching for your ESX Server 3.0.3 or ESX Server 3.5 hosts.

■ Keep your environment as current as possible. Determine whether a bundle is necessary for your environment and apply those bundles. Minimize the change to your software environment whenever possible. For more information on determining bundle applicability, see "About Scanning for Applicable Bundles" on page 14.

■ Analyze the risk factor of applying the bundle. For example, assess the virtual machine and ESX Server 3.0.3 or ESX Server 3.5 host downtime requirements. The scan command provides a good way to analyze risks and server downtime.

■ Download and install roll-ups rather than individual bundles. This saves you download time and ensures, when dependencies exist, that your depot contains all necessary bundles. In addition, always download the current contents.zip file when you download bundles or roll-ups.

■ For a multi-host environment, set up patch depots on a centralized server accessible by all ESX Server hosts. Create a separate depot for each ESX Server version in your environment. You can put depots on an ESX Server host; however, VMware does not recommend it. For more information, see "About Patch Repositories and Patch Depots" on page 10.

About 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 and write a script to scan the depot for applicable bundles and install all at one time. If during the scan operation, esxupdate finds a bundle that requires virtual machines to be powered off, you can write a script that puts them into maintenance mode.

If you wrote custom scripts to automate the ESX Server 3.0 patch process, you must update them to work with ESX Server 3.0.3 or ESX Server 3.5. Specifically, upgrade your scripts to use the esxupdate **–d** option to point to the depot and to install multiple bundles at one time.

NOTE   You can still use the –r option with the info and update commands; however, dependencies will not be resolved.

Managing Patches

The procedures in this section describe how to set up your patch environment and install bundles on your ESX Server 3.0.3 or ESX Server 3.5 hosts.

- "Setting up Patch Depots" on page 19.

- "Downloading and Extracting Patch Files" on page 22.

- "Scanning for Applicable Bundles" on page 22.

- "Retrieving Bundle Information" on page 24.

- "Verifying Disk Space" on page 27.

- "Running a Test Install" on page 27.

- "Verifying Bundle Installations" on page 31.

- "Omitting RPMs from the Installation" on page 31.

- "Reinstalling Bundles" on page 32.

Setting up Patch Depots

VMware suggests you set up patch depots on an HTTP server, FTP server, or an NFS share system. This allows you to update your ESX Server 3.0.3 or ESX Server 3.5 hosts from one central location so you only have to download and extract patches one time for all ESX Server hosts.

To set up an HTTP Depot

You can create a patch depot on an Apache HTTP Server or a Microsoft Internet Information Server (IIS). The following example shows how to set up an Apache HTTP Server as a patch depot.

1 Set up the patch repository.

a Set the Apache `DocumentRoot` directive to the directory from which `httpd` will serve files. For example:

```
DocumentRoot "/var/www/html"
```

b Define a depot directory. For example:

```
<Directory /var/www/html/esx35>
    Options +Indexes
</Directory>
```

2   Restart the Apache service.

NOTE If you do not change directories to the depot directory when you run esxupdate, you must specify the HTTP directory in the command. For example:

`esxupdate –d http://`<HTTP_Server_Hostname>`/`<Depot_Directory>

To set up an FTP Depot

1   Set up the patch repository.

a   Create the directory from which the FTP server will provide the files. For example:

   /var/updates

b   Create a depot directory. For example:

   /var/updates/esx35

NOTE If you do not change directories to the depot directory when you run esxupdate, you must specify the FTP directory in the command. For example:

`esxupdate –d ftp://`<FTP_Server_Hostname>`/`<Depot_Directory>

To set up an NFS Share Depot

1   Set up the patch repository.

a   Create a directory from which the NFS server will provide the files. For example:

   /var/updates

b   Open the /etc/exports file and add the directory path as read only (ro). For example:

   /var/updates *(ro)

c   Create a depot directory. For example:

   /var/updates/esx35

d   Restart the NFS service.

2   Use the mount command to make the NFS share available to each ESX Server 3.0.3 or ESX Server 3.5 host.

NOTE If you do not change directories to the depot directory when you run esxupdate, you must specify the depot NFS Share directory in the command. For example:

`esxupdate –d file:///`<NFS_Share_Hostname>`/`<Depot_Directory>

Maintaining Patch Depots

Clear the contents of your depots periodically to control the disk space usage. This includes deleting bundles that have already been installed and clearing the depot cache.

As a rule of thumb, do not delete the bundles in a depot until you have installed all bundles up to a certain release date. This allows esxupdate to completely check for bundle dependencies. For example, if you install bundles in a roll-up, do not delete them until you install all bundles within that roll-up. Deleting some bundles before you install all of them may corrupt your depot.

If you use an FTP or HTTP server for your depot, bundle and contents files are cached on an ESX Server 3.0.3 or ESX Server 3.5 host every time new bundles are installed. It is not necessary to clear the cache every time you install a bundle; however, check the cache size periodically to make sure it is manageable. See "To clear the depot cache" on page 21. (If your depot is on an NFS share, this procedure is not necessary.)

To clear the depot cache

1   Log into the service console on the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

    NOTE   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using `ssh`.

2   Enter the following command to check the spool usage:

    `du –sh /var/spool/esxupdate`

3   Enter the following command to check the disk space:

    `df –l`

4   Check the cache size and, if necessary, clear the cache by running the esxupdate `scan` command with the --flushcache option:

    `esxupdate –d <DepotURL> ––flushcache scan`

For more information on the `–flushcache` command, see "**––flushcache**" on page 34.

Downloading and Extracting Patch Files

NOTE   If you extract a roll-up into a depot that contains a previous roll-up, the file extraction utility will recognize the files that are the same and ask you to overwrite them or skip them. You can choose either action; the result is the same and does not corrupt the depot.

To download patch `.zip` files

1   If necessary, set up a patch depot. See "Setting up Patch Depots" on page 19.

2   Go to the VMware Infrastructure 3.5 Download Center (http://vmware.com/download/vi) and download the patch `.zip` files and the latest contents `.zip` file.

3   Use a file extraction utility to extract the `.zip` files to the depot.

For information on the depot directory structure, see "About Patch Repositories and Patch Depots" on page 10.

Scanning for Applicable Bundles

You scan bundles in a depot to determine if they are applicable to the ESX Server 3.0.3 or ESX Server 3.5 host and if they have any dependencies. During the scan process, esxupdate checks each bundle for integrity, applicability, and dependencies. The results are returned to the service console for each bundle.

To scan for applicable bundles

1   Log into the service console on the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

NOTE   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using `ssh`.

---

2   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 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 do not need to specify the `-d <depotURL>` option in the command if you are running esxupdate from the depot directory.

- To scan all bundles in a depot:

    esxupdate –d <depotURL> **scan**

- To scan specific bundles in a depot:

    esxupdate –d <depotURL> **–b** <bundleID1> **–b** <bundleID2> **scan**

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

esxcfg–firewall ––blockOutgoing

For information on scanning, see "About Scanning for Applicable Bundles" on page 14. For information on esxupdate syntax and commands, see "**esxupdate scan**" on page 37.

To retrieve information about the scan results

If the scan output contains one or more bundles with conflicts or bundle dependency issues, run the scan command with the ––explain option to retrieve details about the issue.

NOTE　You do not need to specify the –d <depotURL> option in the following commands if you are running esxupdate from the depot directory.

- To retrieve details about all bundles in a depot:

    esxupdate –d <DepotURL> **––explain scan**

- To retrieve details about specific bundles in a depot:

    esxupdate –d <DepotURL> –b <BundleID> –b <BundleID> **––explain scan**

For a sample output of the ––explain option, see "Sample Output: ––explain scan Command" on page 16.

Using a Wildcard (*) to Scan Multiple Bundles

You can run the scan command with a wildcard (*) to specify multiple bundles that have a similar enamor bundle trait. The wildcard acts as a substitute for any characters in the bundle name. For example, you can scan bundles based on their bundle classification or support level.. The following command retrieves a list of all ESX Server 3.0.3 or ESX Server 3.5 bundles with a security (S) classification and general availability (G) support level:

esxupdate –d <depotURL> **–b "*SG" scan**

For information on the VMware bundle naming convention, see "About Patches" on page 8. For information on esxupdate syntax and commands, see "**esxupdate scan**" on page 37.

Retrieving Bundle Information

To retrieve information about bundles and RPM packages, use the esxupdate `query` and esxupdate `info` commands.

To retrieve information about installed bundles

1   From the service console, log on to the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

> **NOTE**   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 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 bundles:

  esxupdate query

  This command lists all installed bundles in ascending installation order and includes the installation date and a brief summary for each bundle. Obsolete bundles are not listed.

- To retrieve detailed information about installed bundles, including RPMs:

  esxupdate –l query

> **NOTE**   You do not need to specify the –d <depotURL> option in the following commands if you are running esxupdate from the depot directory.

- To retrieve a summary about bundles returned by the query:

  esxupdate info <bundleID1> <bundleID2>

- To retrieve detailed information about bundles returned by the query, including RPM details:

  esxupdate –l info <bundleID1> <bundleID2>

For information on esxupdate syntax and commands, see "**esxupdate query**" on page 37 and "**esxupdate info**" on page 37.

Sample Output: `query` **Command**

The following example shows the information returned when you run the `esxupdate query` command on an ESX Server 3.5 host:

```
Installed software bundles

-----Name----        --Install Date--        --------Summary--------

3.5.0-56329          23:37:26 11/04/08       Full installation of ESX
                                             3.5.0-56329

ESX350-200802055-BG  23:49:26 11/04/08       Fix COS running Dell OM5 w/
                                             QLogic

ESX350-200803066-SG  23:50:02 11/04/08       Fix COS security bug
```

To retrieve information about bundles in a depot

1   From the service console, log on to the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

> **NOTE**   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using `ssh`.

2   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 host, type the following command to enable an outgoing connection for the service console:

    esxcfg-firewall --AllowOutgoing

3   Run the esxupdate `info` command.

> **NOTE**   You do not need to specify the –d <depotURL> option in the command if you are running esxupdate from the depot directory.

■   To retrieve a summary of all bundles in a depot:

    esxupdate –d <DepotURL> **info**

■   To retrieve a summary of specific bundles in a depot:

    esxupdate –d <DepotURL> **–b** <bundleID1> **–b** <bundleID2> **info**

■   To retrieve detailed information on all bundles and RPM packages in a depot:

    esxupdate –d <DepotURL> **–l info**

- To retrieve detailed information on specific bundles in a depot, including all RPM packages:

  esxupdate –d <DepotURL> **–l –b** <bundleID1> **–b** <bundleID2> **info**

  or

  esxupdate –d <DepotURL> **–l –b** *<partial_bundleID> **info**

- To retrieve detailed information on the bundles or RPM packages in a specific roll-up:

  e**sxupdate –d** <DepotURL> **–l –b** <RollupID> **info**

4   If 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 37.

Sample Output: `info` **Command**

This example shows the information returned when you run the `esxupdate` -l `info` command on a single bundle:

```
Product : VMware ESX Server

Vendor : VMware, Inc. (support@vmware.com)

Bundle ID: : ESX350–200802055–BG

Release Date : 2008–02–19T21:18:17–07:00

Summary : Fix COS Oops running Dell OM5 w/ QLogic

Description : This patch includes two fixes: A flaw in the service console
kernel which could lead to an error when running Dell OpenManage 5 with a QLogic
Fiber Channel controller; A PSOD, due to an overflow of a statistic stored by
the TCP/IP stack. The statistic was removed.

Requires : 3.5.0–*

Conflicts with:

Obsoletes :

Will reboot after install : False

Maintenance Mode required : False

Bundle URL :file:///depot/3.5.0_depot/ESX350-200802055-BG

RPMs skipped or not yet installed:
200711455–1.0–1vmw
```

Verifying Disk Space

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

■ The `/partition` directory has at least 50MB of free space.

■ The disk space allocated to the service console has an amount of free space that is twice the size of the bundle to be installed (that is, the size of the `.zip` file).

Tip Before installing patches, run a test install. The `--test` option automatically checks the disk space for you. See .

Running a Test Install

A test install enables esxupdate to perform the following tasks without installing any bundle packages:

■ Downloads the appropriate bundle files to the host.

■ If necessary, pre-loads the esxupdate depot cache.

■ Checks for bundle and system dependencies.

■ Determines the bundle order.

■ Determines which RPMs must be installed without installing.

NOTE RPM-level dependencies and conflicts are not checked during a test install.

This command also loads the esxupdate cache for HTTP and FTP depots. As a result, when you run the update command, it will take less time to download the bundles to the ESX Server 3.0.3 or ESX Server 3.5 host.

After esxupdate completes the test, it prints out a report showing if each bundle will be installed, and if not, the reason. You can use this list to fix any dependencies that aren't handled automatically by esxupdate.

The report also displays a list of RPMs that are obsoleted by other bundles, and which bundles caused them to be obsoleted.

To run a test install

1   From the service console, log on to the ESX Server 3.0.3 or ESX Server 3.5 host as
    user `root`.

    > **NOTE**   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5
    > host, connect remotely to the service console using `ssh`.

2   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 host, type the following
    command to enable an outgoing connection for the service console:

    esxcfg–firewall ––AllowOutgoing

3   Run the esxupdate `update` operation with the `––test` option.

    > **NOTE**   You do not need to specify the `–d <depotURL>` option in the command if
    > you are running esxupdate from the depot directory.

    ■   To run a test installation of all bundles in a depot:

        e**sxupdate** –d <DepotURL> **––test update**

    ■   To run a test installation of all bundles in a roll-up:

        esxupdate –d <DepotURL> **–b** <RollupID> **––test update**

    ■   To run a test installation of multiple bundles in a depot:

        esxupdate –d <DepotURL> **–b** <bundleID> **–b** <bundleID> **––test update**

        or

        esxupdate –d <DepotURL> **–b** *<partial_bundleID> **––test update**

    ■   To run a test installation of one specific bundle:

        esxupdate –r <BundleURL> **––test update**

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

    esxcfg–firewall ––blockOutgoing

Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host

Perform the following procedure on each ESX Server 3.0.3 or ESX Server 3.5 host that requires a patch update. The installation process is recorded in the `esxupdate.log` file. By default, this file is located in the `/var/log/vmware` directory.

NOTE To omit RPM packages from being installed with a bundle, see "Omitting RPMs from the Installation" on page 31.

To install bundles on an ESX Server host:

1   Verify the host has enough disk space to perform the installation.

    See "Verifying Disk Space" on page 27.

2   From the service console, log on to the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

    NOTE If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using `ssh`.

    ---

3   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 host, type the following command to enable an outgoing connection for the service console:

    `esxcfg-firewall --AllowOutgoing`

4   Scan the desired bundles to determine if they are applicable and if dependencies are handled.

    See "Scanning for Applicable Bundles" on page 22.

    NOTE If the scan determined that a bundle requires a reboot during the installation, you can use the `--noreboot` option during the `update` operation to force all bundles to be installed before rebooting the server. See "`--noreboot`" on page 35.

    ---

5   If conflicts were returned by the scan, perform the necessary tasks to resolve them. See "About Scanning for Applicable Bundles" on page 14.

6   Do one of the following to run the esxupdate `update` command:

NOTE You do not need to specify the −d <depotURL> option in the command if you are running esxupdate from the depot directory.

■   Install all applicable bundles in the depot:

   esxupdate −d <depotURL> **update**

■   Install specific bundles in the depot:

   esxupdate −d <depotURL> **−b** <bundle1> **update**

   You can also use the wildcard character (*). For example, to install all security bundles in the depot:

   esxupdate −d <depotURL> **−b "*SG" update**

   See "Using a Wildcard (*) to Install Multiple Bundles" on page 30.

■   Install all applicable bundles in a roll-up:

   esxupdate −d <depotURL> **−b** <rollupID> **update**

7   If necessary, wait for the system to reboot.

8   Run the esxupdate `query` command to verify the installation was a success.

   See "Verifying Bundle Installations" on page 31.

9   If you are done accessing the depot, reset the service console firewall to high security:

   esxcfg−firewall −−blockOutgoing

Using a Wildcard (*) to Install Multiple Bundles

You can run the `update` command with a wildcard (*) to install multiple bundles that have a similar name or bundle trait. The wildcard acts as a substitute for any characters in the bundle name. For example, you can install all bundles released with a specific bundle classification or support level. For information on the VMware bundle naming convention, see "About Patches" on page 8.

The following command installs all ESX Server 3.0.3 or ESX Server 3.5 bundles with a security (S) classification that were released with a general availability (G) support level:

esxupdate −d <depotURL> **−b "*SG" update**

For information on installing bundles, see "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29.

Verifying Bundle Installations

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

1   If necessary, log on to the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

> **NOTE**   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using ssh.

2   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 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`

Make certain the bundle you installed is in the return list.

4   (Optional) To retrieve detailed information about one or more bundles in the return list, use one of the following commands:

■   `esxupdate -l query`

■   `esxupdate -l info` <BundleID1> <bundleID2>

Omitting RPMs from the Installation

1   Log on to the ESX Server 3.0.3 or ESX Server 3.5 host as user `root`.

> **NOTE**   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using ssh.

2   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 host, type the following command to enable an outgoing connection for the service console:

`esxcfg-firewall --AllowOutgoing`

3   Run the esxupdate `update` command with the `--exclude` option (`-x`) and specify the RPM package name.

> **NOTE**   You do not need to specify the `-d` <depotURL> option in the command if you are running esxupdate from the depot directory.

`esxupdate -d` <DepotURL> `-x` <PackageName> `update`

For example, if the RPM name is **xinetd–2.6.3–0.18.i386.rpm**, "**xinetd**" is the package name:

esxupdate –d <DepotURL> **–x xinetd update**

This option works across all bundles in the depot; therefore, you do not need to use the **–b** flag to specify the bundle containing the RPM package.

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

esxcfg–firewall ––blockOutgoing

For more information on installing bundles, see "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29.

Reinstalling Bundles

⚠ **CAUTION**   VMware does not recommend reinstalling bundles because installing a bundle overwrites the existing files on the system, regardless of whether the system files are newer. If you overwrite a file with an older version, you may destabilize your ESX Server 3.0.3 or ESX Server 3.5 host. VMware cannot provide guarantees for the integrity of the ESX Server 3.0.3 or ESX Server 3.5 host unless you are reinstalling the *latest* RPM packages. VMware suggests you call VMware technical support before you perform a reinstallation.

1   From the service console, log on to the ESX Server 3.0.3 or ESX Server 3.5 host as user root.

> **NOTE**   If you do not have direct access to the ESX Server 3.0.3 or ESX Server 3.5 host, connect remotely to the service console using ssh.

2   If the depot is not on the ESX Server 3.0.3 or ESX Server 3.5 host, type the following command to enable an outgoing connection for the service console:

esxcfg–firewall ––AllowOutgoing

3   Run the esxupdate update command with the esxupdate **–f** flag and specify the bundle ID.

> **NOTE**   You do not need to specify the –d <depotURL> option in the command if you are running esxupdate from the depot directory.

esxupdate –d <DepotURL> **–b** <BundleID> **–f update**

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

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

Reinstalling a bundle changes the timestamp and the patch order returned by the esxupdate query command. This does not effect the update operation—esxupdate will continue to install bundles in the correct order.

Reference Information

This section contains the following reference information:

- "esxupdate Options and Commands" on page 33.
- "esxupdate Exit Codes and Error Messages" on page 38.
- "VMware Release Terminology" on page 41.
- "ESX Server Patch Management Tools" on page 42.
- "Frequently Asked Questions" on page 43.
- "Installation Checklist" on page 45

esxupdate Options and Commands

The esxupdate utility is a patch maintenance tool for ESX Server. You use it to review the contents of a bundle, enforce software dependencies, 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.

esxupdate Options

Table 3. esxupdate Options

Option	Flag	Description
–d <depotURL>	**–d**	Specifies the location of a depot. If not specified, esxupdate assumes the current directory is a depot. When you use the –d flag without the **–b** flag, esxupdate handles all bundles in the depot. For example: (HTTP): `esxupdate –d http://<HTTP_Server_Hostname>/esx350` (FTP): `esxupdate –d ftp://<FTP_Server_Hostname>/esx350` (NFS): `esxupdate –d file:///var/updates/esx350`

–b <BundleID> | <*>	**–b**	Specifies one or more bundles. If not specified, all bundles are handled. Use one –b flag for each bundle to install. For example:
		
		`esxupdate –b ESX350–200802055–BG –b ESX350–200803066–SG`
		
		Use the asterisk (*) wildcard as a substitute for any characters in the bundle name. For example, to retrieve a list of all uninstalled bundles for ESX Server 3.5, use the following command:
		
		`esxupdate –b ESX350* info`
		
		If you do not run the command from the depot directory, you must specify the depot location with the **–d** flag.

––explain		Explains, in detail, why a bundle is not applicable, has conflicts or has dependency issues. Use this option with the **esxupdate scan** operation. For example: `esxupdate –d <depotURL> ––explain scan`
––flushcache		Removes the depot cache from the host system. Use this option with the **esxupdate update** command. For example: `esxupdate –d <depotURL> ––flushcache update` This is necessary for HTTP and FTP servers. See "Maintaining Patch Depots" on page 21.

Table 3. esxupdate Options (Continued)

Option	Flag	Description
--listrpms	**-l**	Lists details about RPMs in a bundle. Use this option with the **-d**, **-b**, or **-r** flags and the **esxupdate info** and **esxupdate query** commands. ■ When used with the esxupdate info command, lists details about a bundle's installed and not installed (or skipped) RPM packages, including their version numbers. Also lists RPMs removed by the bundle. ■ When used with the esxupdate query command, provides details about the packages that have been installed, removed, or upgraded on an ESX Server host. This includes packages not handled by esxupdate. See "To retrieve information about installed bundles" on page 24 and "To retrieve information about bundles in a depot" on page 25.
--noreboot	**-n**	Forces esxupdate *not* to reboot the ESX Server host after installing the bundle. You can use this command when you install multiple bundles at one time.
--nosigcheck		Forces esxupdate *not* to check the depot file signatures. Use this command if your VMware license has expired and you have not yet received a new one.
--test		Downloads the appropriate bundle files, pre-loads the esxupdate depot cache for HTTP and FTP servers, checks for bundle and system dependencies, and determines the bundle order and RPMs to be installed without installing any packages. Use this option with the **esxupdate update** command. For example: esxupdate -d <depotURL> --test update This option displays status information so you can preview how the update will occur. **Note** This option does not check for RPM-level dependencies. See "Running a Test Install" on page 27.
--verbose	-v	Changes the level of detail written to the esxupdate.log file. Possible values are: ■ 10 — Debug ■ 20 — Detailed Information ■ 30 — Warning ■ 40 — Error

Table 3. esxupdate Options (Continued)

Option	Flag	Description
The following options are not recommended and are provided only for backward compatibility.		
––repo <bundleURL>	**–r**	Provided for backward compatibility only, and should not be used. It does not resolve dependency issues. Specifies the location of a bundle directory. Use this command to run an operation on a specific bundle. For example: (HTTP): `esxupdate –r http://<HTTP_Server_Hostname>/<esx>/<bundleID1>` (FTP): `esxupdate –r ftp://<FTP_Server_Hostname>/esx35/<bundleID1>` (NFS): `esxupdate –r file:///var/updates/esx35/<bundleID1>`
––exclude <package>	**–x**	Excludes the specified RPM package during install. Use this option with the **esxupdate update** command. It works across all bundles; therefore you do not need to specify the bundle containing it. Use one –x flag for each RPM to exclude. The package name must be an RPM name. For example: `esxupdate –x RPM1 –x RPM2 update` If you do not run the command from a depot or bundle directory, you must specify the appropriate path with the **–d** or **–r** flag. See "Omitting RPMs from the Installation" on page 31.
––force <BundleID>	**–f**	Re-installs the specified bundle. This option is not recommended because it often downgrades the RPM installed. Use it with the **esxupdate update** command only to reinstall a current bundle.

esxupdate Commands

Table 4. esxupdate Commands

Command	Description
esxupdate info	Displays information about bundles, including a brief summary, build and install times, bundle dependencies, and RPM details. This command retrieves the bundle definitions from the depot or the patch database on the ESX Server host (/etc/vmware/patchdb). See "Retrieving Bundle Information" on page 24. **Syntax for bundles in a depot:** esxupdate [**–d** <depotURL>] [**–b** <BundleID> | <*>] [**––listrpms**] info **Syntax for bundles in the patch database:** esxupdate [**––listrpms**] info <bundleID1> <bundleID2>
esxupdate query	Returns a list, in install order, of all bundles installed on the ESX Server host. If a bundle was made obsolete by a newer bundle, only the newer bundle is returned. See "To retrieve information about installed bundles" on page 24. **Syntax** esxupdate [**––listrpms**] query
The following query options are provided only for ESX Server 3.5 Update 3.	
–a ––listall	List all bundles including obsoleted bundles.
–o ––onlyobsolete	List only obsoleted bundles.
esxupdate scan	Checks uninstalled bundles for release-specific dependencies, obsolete bundle dependencies, and system state dependencies to determine what patches are valid to install and in what order. You can scan the entire depot or specify bundles in the command. The output is the dependency information. See "About Scanning for Applicable Bundles" on page 14. **Syntax** esxupdate [**–d** <depotURL>] [**–b** <BundleID> | <*>] [**––explain**] [**––nosigcheck**] [**––test**] [**––verbose**] scan
esxupdate update	Checks the specified bundles for dependencies, checks the ESX Server host for dependencies, determines which bundles to install, and installs them on the ESX Server host. See "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29. **Syntax** esxupdate [**–d** <depotURL>] [**–b** <BundleID> | <*>] [**––nosigcheck**] [**––noreboot**] [**––exclude** <package>] [**––test**] [**––flushcache**] [**––verbose**] update

esxupdate Exit Codes and Error Messages

Table 5. esxupdate Error Codes and Error Messages

Exit Code	Error Message	Explanation and Workaround
0	The installation completed successfully; the esxupdate utility has no tasks to complete.	The esxupdate operation is finished or when the specified bundle is already installed. Workaround: None.
80	The installation completed successfully and the ESX Server host must be rebooted.	The esxupdate operation is finished and an installed bundle requires a system reboot. Workaround: Reboot the ESX Server host.
1	You are trying to run esxupdate as a user other than root.	You logged into the ESX Server host as a user other than root and try to run esxupdate. Workaround: Log in as root and try again.
2	Invalid command line syntax or arguments.	The command you entered to run esxupdate is incorrect or is missing an option. Workaround: Check the command line syntax and fix any errors.
5	General IO Error.	There are network issues or file system errors, such as problems with file access permissions. Workaround:
6	Yum is not installed or the Yum configuration file (yum.conf) is missing.	The Yum installation contains errors and the yum.conf file is not in the /etc directory on the ESX Server host. Workaround: Reinstall Yum or restore the missing yum.conf file.
7	A lock cannot be acquired because another instance of esxupdate is running.	You can run only 1 esxupdate instance on the same host at one time. Workaround: Wait until the other instance is finished and then rerun the esxupdate command. You can monitor esxupdate status in the esxupdate.log file located in the /var/log/vmware/ directory.

Table 5. esxupdate Error Codes and Error Messages (Continued)

Exit Code	Error Message	Explanation and Workaround
10	The specified URL is not correct.	The URL contains errors. Workaround: Make sure you use `file:` or `http:` at the beginning of the URL and check that there are no spelling errors.
11	A file was not downloaded or is missing from the depot cache.	The esxupdate command can't find the specified file in the local cache. Workaround: Make sure the network connection is working and rerun the command.
12	The `contents.xml` file or `descriptor.xml` file could not be parsed, was corrupt, or had an illegal value.	esxupdate could not validate the file. Workaround: Make sure the `.zip` file downloaded correctly and run an md5 check. If the file is corrupt, delete it and download it again.
13	The patch database on the ESX Server host is corrupt.	esxupdate could not validate the patch database located in the `/etc/vmware/patchdb` directory and the integrity check failed. Workaround: 1 Delete the patch database file from the ESX Server host. and recreate it. 2 Download and reinstall the applicable (ESX Server 3.0.3 or ESX Server 3.5) release descriptor file. 3 Download the latest roll-up. 4 Run `esxupdate update` on the entire depot.
20	The release does not exist in the patch database.	The bundle you are specifying is not installed on the host. Workaround: Run the `esxupdate query` command to get a list of installed bundles. Then run the `esxupdate info <bundleID>` command on a bundle ID returned by the query.
33	There is not enough disk space to install the specified bundle.	This is a standard disk space error. Workaround: Clear the depot cache or `/tmp` directory and rerun the `esxupdate update` command.

Table 5. esxupdate Error Codes and Error Messages (Continued)

Exit Code	Error Message	Explanation and Workaround
34	An RPM dependency error occurred.	Generally occurs when a 3rd-party agent has a dependency VMware doesn't address. Workaround: Determine if the dependent RPM is needed in your environment and do one of the following: ■ Use the `--force` option to install the RPM. ■ Use the `--exclude` option to skip the RPM. .
37	The metadata signatures for the specified bundle could not be authenticated.	There is a general integrity error with a bundle metadata file or rpm package. This can occur if the file was damaged during the download operation or if it was downloaded from a non-VMware site and was altered. Workaround: Download the bundle from the VMware Download Center and rerun the esxupdate command.
40	General bundle dependency error.	More than one bundle has a dependency error so a specific error code could not be returned. Workaround: Check the `/var/log/vmware/esxupdate.log` file for a description of the problem and a way to work around it.
41	The bundle requires the specified bundle to be installed first.	The required bundle isn't in the depot. Workaround: Download latest roll-up and then run `esxupdate update` on the depot.
42	This bundle is obsolete and does not need to be installed. A superseding bundle has been installed on this host.	You specified an obsolete bundle to install and the ESX Server host has already been updated with a newer bundle that supersedes the obsolete bundle. Workaround: None. VMware suggests you don't install the obsolete bundle.

Table 5. esxupdate Error Codes and Error Messages (Continued)

Exit Code	Error Message	Explanation and Workaround
43	The bundle you are installing conflicts with <bundleID> installed on this host.	You specified a bundleID to install and it conflicts with a bundle already installed on the host. Workaround: None. Both bundles should not be installed on the same host.
52	A failure occurred while installing or removing patch packages. Examine the `esxupdate` log file (`/var/log/vmware/esxupdate.log`) for details about the failure.	This is a general RPM error. Problems might exist when writing to the RPM postscript file. Workaround: check the esxupdate.log file for details. Most often, rerunning the same esxupdate command will fix the problem.
54	The patch installation completed successfully; however an error occurred during system re-configuration and it may not be able to boot.	This occurs during a general update to drivers or the VMkernel. If any of the update steps fail, this error can occur. Workaround: Check the (`/var/log/vmware/esxupdate.log` file for details on the error. Then rerun the same esxupdate command. RPMs already installed are skipped.

VMware Release Terminology

In addition to patches, VMware provides software in the following formats:

- Major releases. See "About Major Releases" on page 41.

- Minor releases. See "About Minor Releases" on page 42.

- Maintenance releases. See "About Maintenance Releases" on page 42.

- Update releases. See "About Update Releases" on page 42.

For information about VMware support policies, see
http://www.vmware.com/pdf/support_terms_conditions.pdf.

NOTE   This section uses an "*x.y.z*" convention to denote product version numbers.

About Major Releases

Major releases are software upgrades that contain fixes for critical and serious bugs that exist in the previous release and fixes for as many non-critical bugs as feasible within

the development schedule. In addition, major releases provide functional enhancements.

A major release version is identified by a change in the "x" position of the product version number. For example, For example, ESX Server 3 is a new major release from ESX Server 2.x. A license key for version 2.x will not work with version 3.0.

Major releases have installation wizards.

About Minor Releases

Minor Releases are software updates that contain fixes for high severity bugs identified in current releases and may include minor enhancements. Minor releases are cumulative—all subsequent minor releases contain the bug fixes provided by the previous minor release. You only need to install the latest minor release when updating your system.

A minor release version is identified by a change in the "y" position of the product version number. For example, ESX Server 3.5 is a minor release for ESX Server 3.0. Your license key for version 3.0 will work with version 3.5.

Minor releases have installation wizards.

About Maintenance Releases

Maintenance releases are software updates that contain fixes for multiple bugs deemed too critical to wait for inclusion in the next product update. The release version is identified by a change in the "z" position of the product version. For example, VMware GSX Server 1.0.3 is a maintenance release that supersedes VMware GSX Server 1.0.2.

You can install maintenance releases with an installation wizard (for ISO images) or with a patch update tool.

About Update Releases

Update releases are software updates that contain updates to hardware devices or drivers and are released as part of the current maintenance release. For example, VMware ESX Server 3.0.2 Update 1 is an update release for ESX Server 3.0.2.

You can install update releases with an installation wizard (for ISO images) or with a patch update tool.

ESX Server Patch Management Tools

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

- About VMware Update Manager
- About VMware Infrastructure Update
- About vihostupdate Remote CLI

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

About VMware Update Manager

VMware Update Manager is a plug-in appliance for VI Client that periodically downloads patch information from the Internet and examines ESX Server 3.0.3, ESX Server 3.5 and ESX Server 3i hosts for patch compliance. If it determines a patch is required, VMware Update Manager downloads the patch and installs it based on user-defined configurations. VMware Update Manager is an optional feature that requires VI Client.

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

About VMware Infrastructure Update

VMware Infrastructure Update is a background process that periodically checks for new updates that are applicable to ESX Server 3i hosts connected to the VI Client. If Infrastructure Update finds applicable patches, it downloads and caches them locally so they can be installed. Infrastructure Update requires VI Client and is installed automatically when it is installed.

VMware Infrastructure Update is documented in the *ESX Server 3i Setup Guide*.

About vihostupdate Remote CLI

`vihostupdate` is a remote CLI you use to scan an ESX Server 3i host for installed patches, enforce software update policies, and install software patches.

The VMware `vihostupdate` Remote CLI is documented in the *ESX Server 3i Configuration Guide* and the *ESX Server 3i Setup Guide*.

Frequently Asked Questions

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

No. VMware recommends you only update your ESX Server 3.0.3 or ESX Server 3.5 host with RPMs supplied by VMware.

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

No. Patches cannot be removed once they have been installed.

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

It is normal for some portions of the ESX Server 3.0.3 or ESX Server 3.5 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 Server installation, see KB 1001179.

Installation Checklist

Print this checklist and use it as a guide when installing patches.

☐ **Setup depots**

See "Setting up Patch Depots" on page 19.

☐ **Download the patch .zip file**

See "Downloading and Extracting Patch Files" on page 22.

☐ **Download the latest contents file**

See "Downloading and Extracting Patch Files" on page 22.

☐ **Scan for applicable bundles**

See "Scanning for Applicable Bundles" on page 22.

☐ **Run a test install**

See "Running a Test Install" on page 27.

☐ **Install applicable bundles**

See "Installing Bundles on an ESX Server 3.0.3 or ESX Server 3.5 Host" on page 29.

☐ **Verify that bundles were installed correctly**

See "Verifying Bundle Installations" on page 31.

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