User's Guide

vCenter Converter Standalone 4.0.1

EN-000158-02

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Contents

Updated Information 5

About This Book 7

1 Introduction 9
- Migration with Converter Standalone 9
- Converter Standalone Components 10
- Converter Standalone Features 10

2 System Requirements 19
- Supported Operating Systems 19
- Installation Space Requirements 20
- Supported Source Types 21
- Supported Destination Types 23
- Restoring VCB Images in Converter Standalone 24
- How Conversion Affects the Source Settings When They Are Applied to the Destination 25
- Changes That Conversion Causes to Virtual Hardware 26
- TCP/IP Port Requirements for Conversion 26
- Common Requirements for Remote Hot Cloning of Windows Operating Systems 26

3 Installing and Uninstalling VMware vCenter Converter Standalone 29
- Install Converter Standalone in Windows 29
- Uninstall, Modify, or Repair Converter Standalone in Windows 30
- Perform a Command-Line Installation in Windows 31
- Command-Line Options for Windows Installation 31
- Perform a Local Installation in Linux 32
- Perform a Client-Server Installation in Linux 33
- Uninstall Converter Standalone in Linux 34
- Modify or Repair Converter Standalone in Linux 34
- Connect to a Remote Converter Standalone Server 35

4 Converting Machines 37
- Convert a Machine 37

5 Configuring VMware Virtual Machines 65
- Configure a Virtual Machine 65

6 Managing Conversion and Configuration Tasks 73
- Manage Tasks in the Task List 73

Glossary 79

Index 87

Updated Information

This *User's Guide for vCenter Converter Standalone 4.0.1* is updated with each release of the product or when necessary.

This table provides the update history of the *User's Guide for vCenter Converter Standalone 4.0.1*.

Revision	Description
EN-000158-02	■ In Table 2-1, SUSE Linux Enterprise Server 7.0 is removed from the list as Converter Standalone does not support this operating system. ■ In Table 2-3, the Third-party virtual machines or system images row is updated to reflect that Parallels Virtuozzo containers are not supported. ■ In Table 2-4, a new row is added to reflect the limitations related to synchronizing the source with the destination machine for Windows 2000 sources. ■ In Table 2-4, a new row is added to reflect the limitations related to synchronizing the source with the destination machine for Windows XP or later sources. ■ In Table 2-5, the Linux host limitations are updated to reflect that VMware Tools installation is not supported. ■ The topic "Perform a Local Installation in Linux," on page 32 now contains the correct filename of the Linux installer file. ■ Step 12 in the "Perform a Client-Server Installation in Linux" topic is updated to reflect the actual procedure. ■ The topic "Customize the Guest Operating System," on page 56 is updated to state explicitly that you cannot customize the guest operating system of Linux source machines. ■ In Step 1 of the "Save Sysprep Files" topic, the Sysprep files locations for Linux are updated to reflect the correct location of the files. ■ The topic Virtual Machine Conversion Limitations has been renamed for clarity to "Conversion Limitations for Virtual Machines," on page 22. ■ The topic Virtual Appliance Conversion Limitations has been renamed for clarity to "Conversion Limitations for Virtual Appliances," on page 23. ■ The topic Powered-On Machine Conversion Limitations has been renamed for clarity to "Conversion Limitations for Powered-On Machines," on page 22.
EN-000158-01	Minor revision.
EN-000158-00	Initial release.

About This Book

This book, the *VMware vCenter Converter Standalone User's Guide*, provides information about installing and using VMware® vCenter Converter Standalone.

Intended Audience

This book is intended for users who want to do the following:

- Install, upgrade, or use Converter Standalone
- Nonintrusively copy and transform physical machines into VMware virtual machines that VMware vCenter Server manages

The material in this book is written for information systems engineers, software developers, QA engineers, trainers, salespeople who run demonstrations, and anyone who wants to create virtual machines.

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VMware welcomes your suggestions for improving our documentation. If you have comments, send your feedback to docfeedback@vmware.com.

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

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Introduction 1

VMware® vCenter Converter Standalone 4.0.1 provides a scalable solution to migrate physical-to-virtual and virtual-to-virtual machines.

Converter Standalone eases interoperability among the following products.

- VMware hosted products can be both conversion sources and conversion destinations.
  - VMware Workstation
  - VMware ACE
  - VMware Fusion™
  - VMware Server
  - VMware Player
- Virtual machines running on ESX that vCenter Server manages can be both conversion sources and conversion destinations.
- Unmanaged VMware ESX
- VMware ESXi Installable
- VMware ESXi Embedded

You can also restore VMware Consolidated Backup (VCB) images into VMware virtual machines.

This chapter includes the following topics:

- "Migration with Converter Standalone," on page 9
- "Converter Standalone Components," on page 10
- "Converter Standalone Features," on page 10

Migration with Converter Standalone

You can convert virtual machines from different source formats to one of several VMware product destinations.

Use Converter Standalone to accomplish the following tasks:

- Convert physical and virtual machines to use across different VMware product formats.
- Move virtual machines to use across different VMware product platforms.
- Import and export virtual appliances from a local file system or from a URL.
- Create VMware virtual machines from VCB images.
- Create VMware virtual machines from third-party formats.

- Reduce the time needed to set up new virtual machine environments.
- Migrate legacy servers to new hardware without reinstalling operating systems or application software.
- Perform migrations across heterogeneous hardware.
- Readjust volume sizes and place volumes on separate virtual disks and migrate the disks across independent datastores.
- View audit trails.

Converter Standalone Components

The Converter Standalone application consists of a client, a server, and an agent. The Converter Standalone client can run on a separate machine. The Converter Standalone server and agent must always run on the same machine. With this configuration, you can set up and manage conversion tasks remotely.

You use the Converter Standalone client to send conversion requests to the server. The server manages conversion requests and sends them to the agent. The Converter Standalone agent runs the conversion task.

You can install all components on the same machine and use the Converter Standalone to convert all source types to all destination types.

You can also install the Converter Standalone client on a separate machine and use the client to manage a remote Converter Standalone server.

During a client-server installation you must install remote access to allow incoming connections to a Converter Standalone server.

Converter Standalone Features

VMware® vCenter Converter Standalone provides a set of features to convert physical and virtual machines.

Table 1-1. Converter Standalone Features

Features	VMware vCenter Converter Standalone
Supported products	Designed for single migrations to VMware products such as VMware Infrastructure, VMware Player, VMware Workstation, and VMware Server.
License	No licensing support.
Cloning	Local and remote hot cloning to hosted products (Workstation, VMware Player, VMware Server) and ESX.
Task management	Single migration at a time. Set up a conversion.

The VMware Converter Boot CD (for cold cloning) is available only with a Converter Enterprise license. For details about how to install the Boot CD, see the *VMware Converter Enterprise for VirtualCenter 2.5 Administration Guide*.

Cloning and System Reconfiguration of Physical Machines

Cloning and system reconfiguration are processes that create the virtual disks and configure the target virtual machine so that it works successfully in a virtual environment.

Cloning is the process of creating a cloned disk, where the cloned disk is a virtual disk that is an exact copy of the source physical disk. This process involves copying the data on a physical source machine's hard disk and transferring that data to a target virtual disk (the new cloned disk).

System reconfiguration is the process of adjusting the migrated operating system so that it can function on virtual hardware. This adjustment is performed on the target virtual disk after cloning. The target virtual disk can then function as a bootable system disk in a virtual machine.

Converter Standalone creates a VMware virtual machine based on a source physical machine. The migration process is nondestructive, so that you can continue to use the original source machine. To run a converted VMware virtual machine on the same network as the source physical machine, you must modify the network name and IP address on one of the machines. This modification avoids network related conflicts and allows the physical and virtual machines to coexist.

NOTE You cannot move original equipment manufacturer (OEM) media between physical machines. The license is attached to the server when you purchase it from the OEM and you cannot reassign it. You can only reassign retail and volume licenses to new physical servers. If you migrate an OEM Windows image, you must have a Windows Server Enterprise or Datacenter Edition license on the ESX host to run multiple virtual machines.

Hot and Cold Cloning

Although Converter Standalone 4.0.1 supports only hot cloning, you can still perform cold cloning using the VMware Converter 3.0.3 Boot CD. Hot and cold cloning have different applications that depend on your virtual environment.

Hot cloning, also called live cloning or online cloning, entails cloning the source machine while it is running its operating system. Hot cloning allows cloning machines without shutting them down.

When you create a hot clone, the resulting virtual machine is not an exact copy of the source machine because processes continue to run on the source machine during conversion.

To reduce the difference between the source and the resulting virtual machine, Converter Standalone can shut down unused Windows services based on your settings on the View/Edit options page. You can set Converter Standalone to synchronize the destination virtual machine with the source machine after hot cloning. You do this by transferring from the source to the destination the blocks that were changed during the initial cloning period.

Converter Standalone can shut down the source machine and power on the destination machine when the conversion process is complete. This action is the P2V motion that allows migrating a physical machine source to a virtual machine destination. The destination machine takes over the source machine operations with the least possible down time.

Cold cloning, also called offline cloning, entails cloning the source machine when it is not running its operating system. In cold cloning, the user restarts the source machine from a CD that contains an operating system and the VMware Converter application. This cloning method allows you to create the most consistent copy of the source machine because nothing changes on the source machine during conversion. Cold cloning leaves no data on the source machine, but requires physical access to the source machine that is being cloned.

When you cold clone a Linux source, the resulting virtual machine is an exact replica of the source machine and you cannot reconfigure the virtual machine. You must reconfigure the resulting virtual machine after the cloning is complete.

Table 1-2 compares the hot and cold cloning modes.

Table 1-2. Hot and Cold Cloning Comparison

Comparison Criteria	Hot Cloning with Converter Standalone 4.0.1	Cold Cloning with Converter Enterprise 3.0.x
Licensing	No license required with VMware vCenter Converter Standalone 4.0.1.	License file required for Enterprise features of VMware Converter Enterprise.
Required installation	Full Converter Standalone installation or a server and agent installation.	No installation. Installation occurs when you reboot the source machine.
Supported sources	Local and remote powered-on physical or virtual machines.	Local powered-off physical machines.

Table 1-2. Hot and Cold Cloning Comparison (Continued)

Comparison Criteria	Hot Cloning with Converter Standalone 4.0.1	Cold Cloning with Converter Enterprise 3.0.x
Advantages	■ Does not require direct access to the source machine. ■ You can clone the source machine while it is running.	■ Creates the most consistent copy of the source machine. ■ Leaves no data on the source machine.
Disadvantages	■ On source systems running MS Windows 2000, you must install a special driver and reboot the system once. ■ Applications that constantly modify files need to be VSS aware to allow you to create a consistent snapshot for cloning. ■ Dynamic source disks are read but not preserved during volume-based conversions. Dynamic disks are converted into basic volumes on the target virtual machine.	■ You must restart the source machine to clone it. ■ Requires physical access to the source machine. ■ Hardware detection and configuration of Boot CD. ■ Converter Standalone 4.0.1 features are not supported.
Use	■ Clones running source machines without shutting them down. ■ Use when you have unique hardware that the boot CD does not recognize.	■ To clone a system that Converter Standalone does not support. ■ To preserve the exact disk layout in the target. ■ To preserve logical volumes in dynamic disks (Windows) or LVM (Linux).
Do not use	When you do not want anything to be installed on the source system.	■ When you want Linux P2V with automatic reconfiguration. ■ When you do not have physical access to the source machine. ■ When you cannot afford a long downtime of the source system. ■ To perform P2V Motion.

Prepare for Cold Cloning

Because VMware vCenter Converter Standalone 4.0.1 does not support cold cloning, you must use an earlier Converter edition boot CD. The features supported on the boot CD depend on the product version you choose.

VMware Converter 3.0.x Enterprise edition is not a free software product.

Procedure

1 To obtain a boot CD, go to the VMware Download Web site and download Converter 3.0.x Enterprise installation.

2 Extract the boot CD `.iso` file from the installation package.

3 Burn the boot CD `.iso` file on a CD.

What to do next

Follow the on-screen instructions to proceed with cold cloning.

Hot Cloning of Physical Machines

Converter Standalone supports only hot cloning of physical machines. VMware Converter 3.0.x supports cold cloning.

You can select which services to keep running on the source machine while the conversion is running. To have the destination virtual machine retain all of the blocks that changed in the source system during the cloning process, you can turn on the synchronization feature. With synchronization on, if any changes occur on the source machine during the conversion, Converter Standalone copies them to the destination machine after the conversion is complete. This process helps you to prevent downtime on important services.

NOTE When you hot clone dual-boot systems, you can clone only the default operating system to which the `boot.ini` file points. To clone the nondefault operating system, change the `boot.ini` file to point to the other operating system and reboot. After you are booted in to the other operating system, you can install Converter Standalone and hot clone it. If your second operating system is Linux, you can boot it, install the Converter Standalone Linux version, and clone your distribution.

Local and Remote Cloning of Physical Machines

Local cloning is a migration performed with Converter Standalone running on the source machine. Remote cloning is migration when Converter Standalone is running on a machine different than the source. When you perform a remote clone, you can access the remote source machine through the network, as long as it is running.

On physical machine sources running Linux, local cloning is set up and performed like remote cloning.

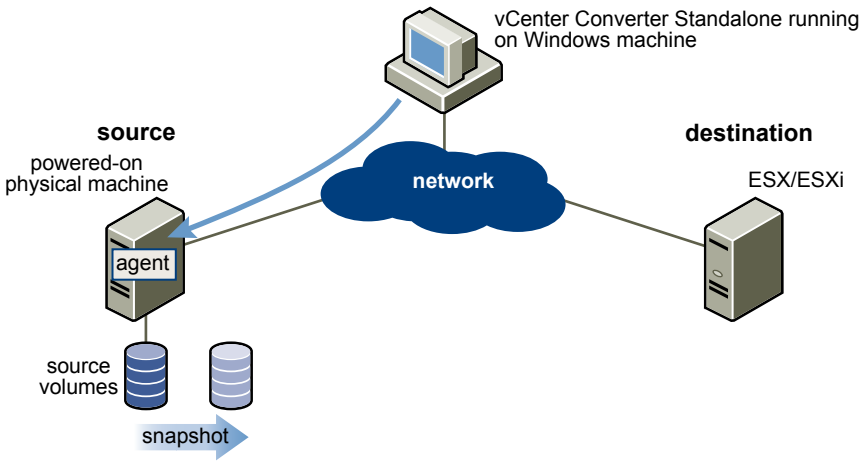
Remote Hot Cloning of Physical Machine Sources That Are Running Windows

You use the Conversion wizard to set up a migration task and Converter Standalone performs all of the cloning tasks.

The following workflow is an example of remote hot cloning, in which the physical machine being cloned experiences no downtime.

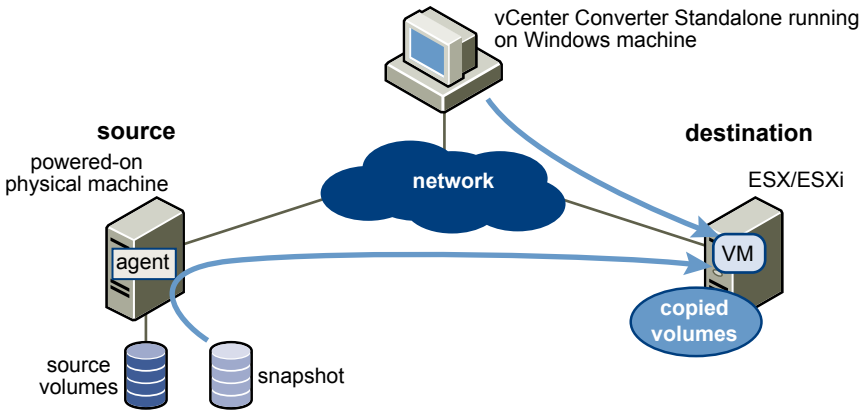
1 Converter Standalone prepares the source machine for the conversion.

   Converter Standalone installs the agent on the source machine and the agent takes a snapshot of the source volumes.



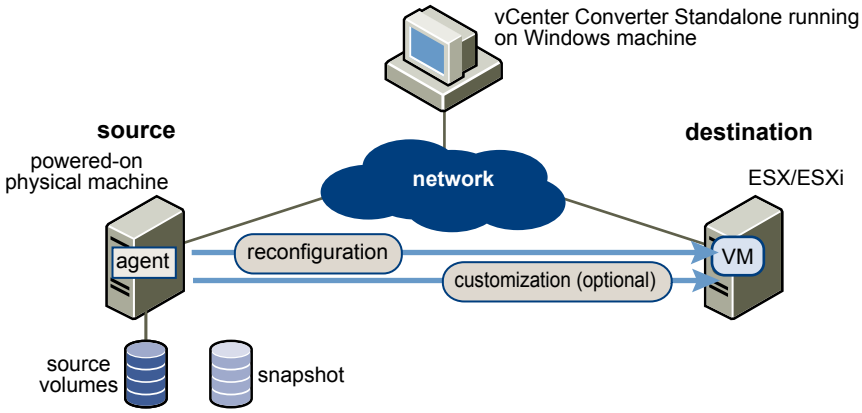
2 Converter Standalone prepares the virtual machine on the destination machine.

   Converter Standalone creates a virtual machine on the destination machine and the agent copies volumes from the source machine to the destination machine.



3 Converter Standalone completes the conversion process.

The agent installs the required drivers to allow the operating system to boot in a virtual machine and personalizes the virtual machine, for example, changing the IP information.



4 Optionally Converter Standalone uninstalls the agent from the source machine.

The virtual machine is ready to run on the destination server.

Hot Cloning of Physical Machine Sources That Are Running Linux

Conversions of physical machine sources that are running Linux differ from conversions of Windows sources.

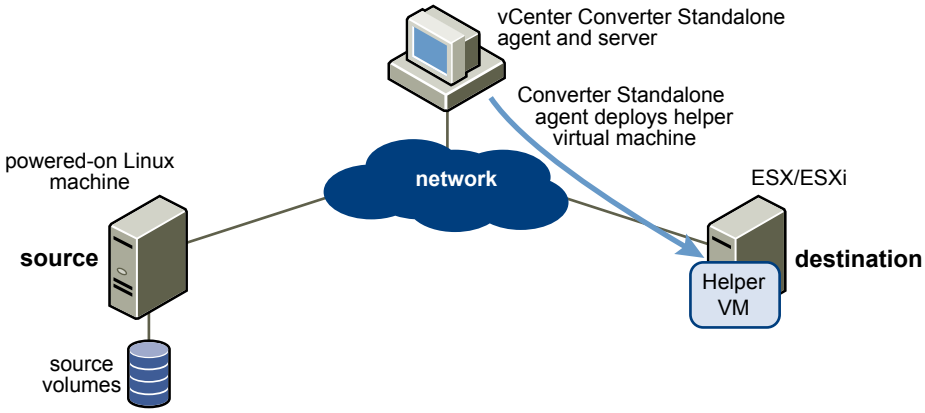
In Windows conversions, Converter Standalone agent is deployed to the source machine and the source information is pushed to the destination machine.

In Linux conversions, no agent is deployed on the source machine. A helper virtual machine is created instead and deployed to the destination ESX/ESXi host. The source data is then pulled from the source Linux machine to the helper virtual machine. After the conversion is over, the helper virtual machine shuts down to become the target virtual machine the next time you power it on.

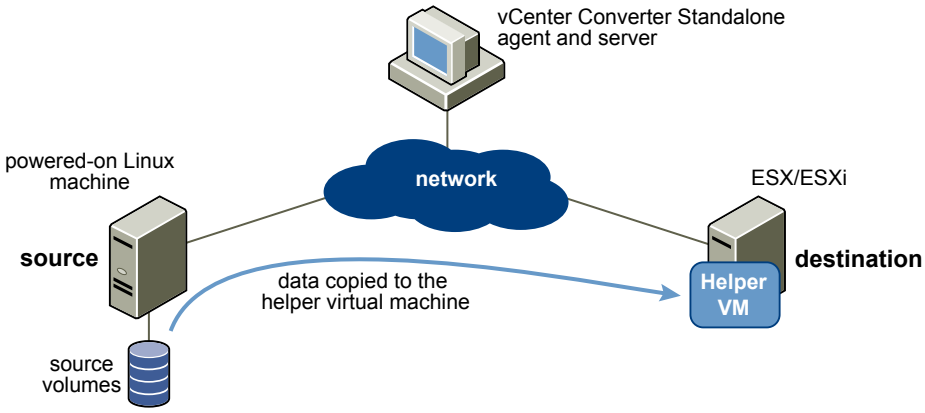
Converter Standalone supports converting Linux sources only to managed destinations.

The following workflow demonstrates the principles of hot cloning physical machine sources that run Linux to managed destinations.

1 The Converter Standalone agent uses SSH to connect to the source machine and retrieves source information. The Converter Standalone agent creates an empty helper virtual machine based on your conversion task settings. The helper virtual machine serves as a container for the new virtual machine during conversion. The Converter Standalone agent deploys the helper virtual machine on the managed destination, an ESX/ESXi host. The helper virtual machine boots from a `*.iso` file that is located on the converter Standalone server machine.



2 The helper virtual machine powers on, boots from the Linux image, and connects to the source machine through SSH. Then it starts retrieving the selected data from the source. While you set up the conversion task, you can select which source volumes to be copied to the destination machine.



3 Optionally, when data copying is complete, the target virtual machine is reconfigured to allow the operating system to boot in a virtual machine.

4 The Converter Standalone agent shuts down the helper virtual machine. The conversion process is complete.

Optionally, you can configure Converter Standalone to power on the newly created virtual machine after the conversion is complete.

Cloning Modes

Converter Standalone implements volume-based cloning, disk-based cloning, and linked cloning.

Table 1-3. Cloning Modes

Cloning Mode	Application	Description
Volume based	Selects the volumes to copy from the source machine to the destination machine.	Volume-based cloning is relatively slow. File-level cloning is slower than block-level cloning. Dynamic disks are converted into basic volumes on the target virtual machine.
Disk based	Creates exact copies of the source machines, for all types of basic and dynamic disks.	You cannot select which data to copy. Disk-based cloning is faster than volume-based cloning.
Linked clone	Use to quickly check compatibility of non-VMware images	For certain third-party sources, the linked clone is corrupted if you power on the source machine. Linked cloning is the fastest (but incomplete) cloning mode that Converter Standalone supports.

Volume-Based Cloning

Converter Standalone supports volume-based cloning for hot and cold cloning and to import existing virtual machines.

In volume-based cloning, all volumes in the destination virtual machine are converted to basic volumes, regardless of their type in the corresponding source volume. Volume-based cloning at the file or block level is performed, depending on the volume size you select. Dynamic source disks are read but not preserved during volume-based conversions. Dynamic disks are converted into basic volumes on the target virtual machine.

Volume-based cloning at the file level Performed when any size smaller than the original is selected.

Volume-based cloning at the block level Performed when the volume size is maintained or extended.

Depending on the cloning mode, Converter Standalone might not support some types of source volumes. Table 1-4 shows the supported and unsupported source volume types.

Table 1-4. Supported and Unsupported Source Volumes

Cloning Mode	Source Volumes Supported	Source Volumes Not Supported
Virtual machine importing	■ Basic volumes ■ All types of dynamic volumes ■ Windows NT 4 with mirrored volumes ■ Only master boot record (MBR) disks	■ RAID ■ Windows NT4 fault-tolerant volumes ■ GUID partition table (GPT) disks
Hot cloning	All types of source volumes that Windows recognizes	■ Any volumes that reside on Windows NT operating systems

Volume-based cloning at the file level is supported only for FAT, FAT32, NTFS, ext2, ext3, and ReiserFS file systems.

Disk-Based Cloning

Converter Standalone supports disk-based cloning to import existing virtual machines.

Disk-based cloning transfers all sectors from all disks and preserves all volume metadata. The destination virtual machine receives the same volumes, of the same type as the volumes of the source virtual machine. Disk-based cloning supports all types of basic and dynamic disks.

Full and Linked Clones

Clones can be full or linked according to the amount of data copied from the source to the destination machine.

A full clone is an independent copy of a virtual machine that shares nothing with the parent virtual machine after the cloning operation. Ongoing operation of a full clone is separate from the parent virtual machine.

Because a full clone does not share virtual disks with the parent virtual machine, full clones generally perform better than linked clones. Full clones take longer to create than linked clones. Creating a full clone can take several minutes if the files involved are large.

You can create a full clone by using any disk clone mode other than the linked clone mode.

A linked clone is a copy of a virtual machine that shares virtual disks with the parent virtual machine in an ongoing manner. A linked clone is a fast way to convert and run a new virtual machine. You can create a linked clone from the current state, or snapshot, of a powered-off virtual machine. This practice conserves disk space and allows multiple virtual machines to use the same software installation.

All files available on the source machine at the moment of the snapshot continue to remain available to the linked clone. Ongoing changes to the virtual disk of the parent do not affect the linked clone, and changes to the disk of the linked clone do not affect the source machine. If you make changes to a source Virtual PC and Virtual Server machines, or to LiveState images, the linked clone is corrupted and you cannot use it anymore.

A linked clone must have access to the source. Without access to the source, you cannot use a linked clone at all.

To quickly convert a virtual machine, create a linked clone. See "Create a Linked Clone," on page 53.

Migrating Existing Virtual Machines and System Images

You can move virtual machines between hosted products and managed products. A hosted product runs as an application on physical machines with an operating system. A managed product is a bare-metal VMware product that provides a thin software layer (the hypervisor) that enables it to run directly on the physical machine.

Converting virtual machines

You can move VMware virtual machines between Workstation, VMware Player, VMware ACE, VMware Fusion, ESX, ESXi Embedded, ESXi Installable, and VMware Server. You can also import virtual machines from Microsoft Virtual Server and Virtual PC.

Configuring virtual machines

For VMware virtual machines with disks set up by restoration from a backup of a physical host or by some other direct means of copying, Converter Standalone prepares the image to run on VMware virtual hardware. If you used a third-party virtualization software to create a virtual machine on an ESX host,

you can use Converter Standalone to reconfigure it. You can also reconfigure any operating system installed on a multiboot machine if you imported the virtual machine to an ESX host. Before you reconfigure a multiboot machine, you must change the `boot.ini` file.

Converting and exporting virtual appliances

You can convert and export virtual appliances stored in Open Virtual Machine Format (OVF and OVA). You can import a virtual appliance to run in an existing ESX host or Workstation virtual machine, or you can export an existing VMware virtual machine to an OVF virtual appliance to share over the network.

Virtual Appliance Overview

Converter Standalone supports importing virtual appliances stored in OVF 0.9 or OVF 1.0 and creating virtual appliances stored in OVF 1.0. An appliance is a preconfigured virtual machine that typically includes a preinstalled guest operating system and other software. Importing virtual appliances allows you to add preconfigured virtual machines to your vCenter, ESX Server, or Workstation inventory.

Importing a virtual appliance is similar to deploying a virtual machine from a template. You can import a virtual appliance from any local file system accessible from the source machine or from a remote Web server. Local file systems can include local disks (such as `C:`), removable media (such as CDs or USB key chain drives), and shared network drives.

OVF is not a bootable format. You cannot boot the file in a virtualization platform in its current state. You must import the appliance to either a hosted or managed destination to boot it.

In addition to importing virtual appliances with Converter Standalone, you can also import OVF virtual appliances to ESX Server or a VirtualCenter server by using VI Client 2.5.

Every OVF virtual appliance contains a `.ovf` file with metadata that describes the virtual appliance. An OVF virtual appliance can be packaged as a `.ovf` file where the `.ovf` file is a tarred file that contains all of the files in the OVF virtual appliance.

Managing Tasks

Converter Standalone provides a task manager to manage conversion tasks and configuration tasks.

After you create a task to import or configure a machine, use the Task View of the task manager to perform the following tasks:

- Control the number of concurrent conversion or configuration tasks.
- Create a copy of a task and edit it.
- Cancel a task.
- Delete a task.
- View a task's progress.
- Export and view the log files for a task or for all tasks.
- Filter tasks that are displayed in the task list.

System Requirements 2

This information describes the requirements you must fulfill before you operate VMware® vCenter Converter Standalone and describes the compatibilities and interoperabilities among the systems on which and with which Converter Standalone works.

This chapter includes the following topics:

- "Supported Operating Systems," on page 19
- "Installation Space Requirements," on page 20
- "Supported Source Types," on page 21
- "Supported Destination Types," on page 23
- "Restoring VCB Images in Converter Standalone," on page 24
- "How Conversion Affects the Source Settings When They Are Applied to the Destination," on page 25
- "Changes That Conversion Causes to Virtual Hardware," on page 26
- "TCP/IP Port Requirements for Conversion," on page 26
- "Common Requirements for Remote Hot Cloning of Windows Operating Systems," on page 26

Supported Operating Systems

The Converter Standalone components you can run on an operating system determine the type of support available: client support, server support, and remote access support. Source support is available if Converter Standalone can convert the operating system that is installed on a powered-on or virtual machine.

For a list of operating systems on which you can install Converter Standalone components, see Table 2-1.

Table 2-1. Supported Operating Systems

Supported Operating Systems	Client Support	Server Support	Source for Remote P2V	Source for Virtual Machine Import
Windows NT4 SP6+	N	N	N	Y
Windows 2000 SP4	Y	Y	Y	Y
Windows XP Professional (32 bit and 64 bit) SP3	Y	Y	Y	Y
Windows 2003 (32 bit and 64 bit) SP2, Revision 2	Y	Y	Y	Y

Table 2-1. Supported Operating Systems (Continued)

Supported Operating Systems	Client Support	Server Support	Source for Remote P2V	Source for Virtual Machine Import
Windows Vista (32 bit and 64 bit) SP1	Y	Y	Y	Y
Windows 2008 Server (32 bit and 64 bit)	Y	Y	Y	Y
Red Hat Enterprise Linux 2.1 (32 bit)	N	N	N	Y
Red Hat Linux Advanced Server 2.1 (32 bit)	N	N	N	Y
Red Hat Enterprise Linux 3.0 (32 bit and 64 bit)	N	Y	N	Y
Red Hat Enterprise Linux 4.0 (32 bit and 64 bit)	Y	Y	Y	Y
Red Hat Enterprise Linux 5.0 (32 bit and 64 bit)	Y	Y	Y	Y
SUSE Linux Enterprise Server 8.0	N	Y	N	Y
SUSE Linux Enterprise Server 9.0 (32 bit and 64 bit)	N	Y	N	Y
SUSE Linux Enterprise Server 10.0 (32 bit and 64 bit)	Y	Y	Y	Y
Ubuntu 5.x	N	Y	N	Y
Ubuntu 6.x	Y	Y	Y	Y
Ubuntu 7.x (32 bit and 64 bit)	Y	Y	Y	Y
Ubuntu 8.x (32 bit and 64 bit)	Y	Y	Y	Y

Installation Space Requirements

During installation you can select which Converter Standalone components to install. All components require different disk space to install.

Table 2-2 shows the disk space required to install Converter Standalone and its components.

Table 2-2. Installation Space Requirements

Operating System	Installation Component	Disk Space Required
Windows	Installation file	100MB
	Decompressed installation file	100MB
	Client	25MB
	Server and agent	360MB
Linux	Installation file	130MB

Table 2-2. Installation Space Requirements (Continued)

Operating System	Installation Component	Disk Space Required
	Decompressed installation file	500MB
	Client	130MB
	Server and agent	450MB

Supported Source Types

With Converter Standalone, you can convert local or remote powered-on machines, VMware virtual machines, third-party virtual machines, system images, and OVF or OVA virtual appliances.

Table 2-3 lists the sources that Converter Standalone supports.

Table 2-3. Supported Sources

Source Type	Sources
Powered-on machines	■ Windows physical machines (local or remote) ■ Linux physical machines (local and remote) ■ Windows virtual machines running on Hyper-V Server (local and remote) ■ Windows virtual machines running on Citrix XenServer 4 Enterprise Edition (local and remote) ■ Windows virtual machines running on Virtual Iron version 4.2 (local and remote)
VMware Infrastructure virtual machines	■ ESX 3.x and 4.0 ■ ESXi versions 3.5 and 4.0 Installable and ESXi versions 3.5 and 4.0 Embedded ■ ESX Server 2.5.x (if VirtualCenter 2.x manages ESX) ■ vCenter Server 2.0, 2.5, and 4.0
VMware virtual machines	■ VMware Workstation 4.x, 5.x, 6.0.x, and 6.5.x ■ VMware Fusion 1.x and 2.x ■ VMware Player 1.x, 2.x, and 2.5 ■ VMware ACE 1.x, 2.x, and 2.5.x ■ VMware Server 1.x, 2.x
Third-party virtual machines or system images	■ VMware Consolidated Backup (`.vmx`) ■ Acronis True Image Echo 9.1 and 9.5, and Acronis True Image 10 Home (`.tib`). Supported only in Converter Standalone server and agent for Windows. ■ Symantec Backup Exec System Recovery (formerly LiveState Recovery) 6.5, 7.0, 8.0, and 8.5, LiveState Recovery 3.0 and 6.0 (`.sv2i`, `.v2i` or `.iv2i`). Supported only in Converter Standalone server and agent for Windows. ■ Norton Ghost version 10.0, 11.0, 12.0, 13.0, and 14.0 (`.sv2i`). Supported only in Converter Standalone server and agent for Windows. ■ Parallels Desktop for Microsoft Windows and Mac OS X 2.0, 2.5, 3.0, and 4.0 (`.pvs` and `.hdd`). Parallels Virtuozzo containers are not supported. ■ Parallels Workstation 2.0 (`.pvs`) ■ All versions of StorageCraft ShadowProtect Desktop, Server, SBS, IT, and so on (`.spf`). Supported only in Converter Standalone server and agent for Windows. ■ Microsoft Virtual PC 2004 for Windows and Microsoft Virtual PC 2007 for Windows (`.vmc`) ■ Microsoft Virtual Server 2005 and 2005 R2 (`.vmc`)
OVF or OVA virtual appliances	■ OVF specification version 0.9 and 1.0 ■ Local `.ovf` or `.ova` file ■ URL to an `.ovf` or `.ova` file

You must power off source virtual machines before you convert them. You can convert running virtual machines only if you follow the procedure for converting powered-on machines.

You can convert local Linux machines by treating them as remote powered-on machines. You must specify the local IP address and root credentials to proceed.

Conversion Limitations for Powered-On Machines

When you convert a powered-on machine, some conversion features might not be available for certain source operating systems.

For a list of limitations dependent on the source operating system, see Table 2-4.

Table 2-4. Powered-On Machine Conversion Limitations

Source Operating System	Limitations
Windows NT Server SP6+	Only virtual machines can be converted.
Windows 2000	Synchronization is not supported.
Windows XP and later	■ Synchronization is supported only for volume-based cloning at the block level. ■ Synchronization is supported only for managed destinations.
Linux	■ Only volume-based cloning at the file level is supported. ■ Only managed destinations are supported.

Conversion Limitations for Virtual Machines

Certain limitations exist when you convert a virtual machine, depending on the type of operating system on which you run Converter Standalone.

You must power off source virtual machines before you convert them. You can convert running virtual machines only if you follow the procedure for converting powered-on machines.

You can convert multiboot virtual machines only if GRUB is installed as the boot loader. LILO is not supported.

For a list of limitations dependent on the host operating system, see Table 2-5.

Table 2-5. Virtual Machine Conversion Limitations

Host Operating System	Limitations
Windows 2000	Reconfiguration and customization are supported only for Windows NT4 and Windows 2000 guest operating systems.
Windows Server 2003 Windows XP Windows Vista Windows Server 2008	■ Disk-based cloning only for Linux guests. ■ Reconfiguration or customization for Linux guests is not supported. ■ VMware Tools installation for Linux guests is not supported.
Linux	■ Only disk-based cloning for all guest operating systems. ■ Volume-based cloning is not supported. ■ Gathering volume information for Windows guests is not supported. ■ Conversion of Symantec LiveState Recovery Image, Acronis, Storage Craft, and VCB is not supported. ■ Reconfiguration is only supported for all Windows guests except Windows NT4. ■ Reconfiguration of Windows guests is not supported if the active partition of the guest operating system is located on a FAT partition. ■ VMware Tools installation is not supported. ■ Customization is not supported.

Conversion Limitations for Third-Party Virtual Machines or System Images

Converter Standalone can convert third-party virtual machines, system images, and ShadowProtect and BackupExec System Recovery images. These conversions have some limitations.

Third-party virtual machines and system images have the following limitations:

- Virtual machines from Macintosh versions of Virtual PC are not supported.
- The operating system on the source Virtual PC or Virtual Server virtual machine must be a Windows guest operating system supported by the intended VMware platform (for example, Workstation 5 or 6.0.x). For a list of supported operating systems, see the *Guest Operating System Installation Guide.*

  Converter Standalone supports Virtual PC and Virtual Server virtual machines with most Windows operating systems earlier than Windows NT 4.0 and with non-Windows operating systems (for example, Linux and DOS) only for cloning. Converter Standalone does not support configuring for these systems.

ShadowProtect and Backup Exec System Recovery have the following limitations:

- Dynamic disks are not supported.
- All images for the backup of a machine must be in a single folder with no other images placed there.
- For volume-based cloning, all volumes in the disk up to the active and system volumes must be backed up. For example, if a disk has four partitions, 1 through 4, with partition 2 as the active volume and partition 3 as the system volume, the backup must include partitions 1 through 3.
- For incremental images, up to 16 incremental backups are supported.
- Images of systems with logical drives are not supported if the logical drive is also a system or active volume (ShadowProtect only).

Conversion Limitations for Virtual Appliances

Some limitations exist when you convert virtual appliances.

The following scenarios are not supported:

- Converting local and remote physical machines to virtual appliances
- Selecting a subset of the volumes or resizing the volumes. You must select all volumes for an import and maintain the size of all of the volumes on the target machine.
- Converting from OVF to OVF. That is, when both source and destination are virtual appliances.
- Converting third-party backup images or virtual machine images to a virtual appliance.
- Converting Windows 2000 virtual machines with scsiport.sys driver version 5.0.2195.7017 to a virtual appliance.
- Converting Windows NT 4 SMP virtual machines to a virtual appliance.

Although Converter Standalone does not support the preceding scenarios, in each case you can use Converter Standalone to first convert the source machine to a VMware virtual machine and then convert that machine to a virtual appliance.

Supported Destination Types

Converter Standalone can create virtual machines compatible with VMware hosted and managed products. Converter Standalone can also create virtual appliances for Internet distribution.

Table 2-6 shows the destinations that Converter Standalone supports.

Table 2-6. Supported Destinations

Destination Type	Supported Versions
VMware Infrastructure virtual machine	Managed destinations ■ ESX 3.x and 4.0 ■ ESXi 3.x and 4.0 Installable and ESXi 3.x and 4.0 Embedded ■ vCenter Server 2.x and 4.0
VMware virtual machines	Hosted destinations ■ VMware Workstation 5.x, 6.0.x, and 6.5.x ■ VMware Fusion 1.x and 2.x ■ VMware ACE 2.0.x and `VMware ACE 2.5.x` ■ VMware Player 1.x, 2.0.x, and 2.5.x ■ VMware Server 1.x and 2.x
OVF and OVA virtual appliances	■ OVF spec version 1.0 ■ Local `.ovf` or `.ova` file

NOTE For hosted destinations that reside on SMB or NFS shares, you must use volume-based cloning and create 2GB disks that are not preallocated.

Restoring VCB Images in Converter Standalone

VMware Consolidated Backup enables you to back up all of the virtual machines of an entire ESX server. The backup is stored by using Workstation disks, a `.vmx` file, and a catalog file. Converter Standalone can restore VCB images to ESX server hosts and convert them to VMware standalone virtual machines.

When it runs on Windows hosts, Converter Standalone supports restoring VCB images of the source operating systems described in Table 2-1.

The virtual machine conversion limitations for Windows hosts described in Table 2-5 also apply when restoring VCB images. Restoring VCB images from Linux host operating systems is not supported.

Converter Standalone does not maintain the `.nvram` file, nor the VMware log files.

Converter Standalone does not read the original location settings from the catalog file. To restore to the same location, find information such as datastore, host name, folder name, and resource pool in the catalog file and enter it in the Conversion wizard. In addition, Converter Standalone does not read the original display name from the catalog file. To use the same name and if you do not remember it, look it up in the catalog file. You can read the catalog file as a plain text file.

Information Not Preserved When Using Converter Standalone for Managed Product Destinations

When you restore VCB images for managed product destinations (ESX server hosts, for example), Converter Standalone does not preserve certain hardware backing information from the original image, but rather substitutes default settings.

Table 2-7 shows which areas are affected.

Table 2-7. Changes to Hardware Information Because of Conversion

Affected Area	Behavior
CD-ROM	Defaults to device type: client device.
Floppy	Defaults to device type: client device.
Network adapters	Defaults to the list of network adapters in the GUI. The MAC address is not preserved. The destination host regenerates the MAC address.

Table 2-7. Changes to Hardware Information Because of Conversion (Continued)

Affected Area	Behavior
Serial port	Defaults to the physical serial port on destination host machine.
Parallel port	Defaults to the physical parallel port on destination host machine.

When you restore images, the Converter Standalone GUI does not preserve certain other virtual machine properties from the original image, but substitutes default settings. Table 2-8 shows the affected areas.

Table 2-8. Changes to Properties Because of Conversion

Affected Area	Behavior
UUID	The virtual machine's BIOS and location, identified by **uuid.bios** and **uuid.location**, are not preserved. The destination host machine regenerates the BIOS and location.
Disk resource allocation	Defaults to the values available on the host when the virtual machine is created.

Information Not Preserved for Hosted Product Destinations

When you import a VCB image to a hosted product destination (Workstation, for example), Converter Standalone cannot guarantee that virtual machine properties can be preserved. This behavior is because Converter Standalone handles this importation as a normal migration, not a restore.

For more information about VCB images, see the *Virtual Machine Backup Guide*.

How Conversion Affects the Source Settings When They Are Applied to the Destination

The VMware virtual machine that Converter Standalone creates contains an exact copy of the disk state from the source physical machine, virtual machine, or system image. Some hardware-dependent drivers and sometimes the mapped drive letters are not included in the copy.

The following settings from the source computer remain identical:

- Operating system configuration (computer name, security ID, user accounts, profiles, preferences, and so on)
- Applications and data files
- Each disk partition volume serial number

Because the target and the source virtual machines or system images have the same identities (name, SID, and so on), running both machines on the same network can result in conflicts. To redeploy the source virtual machine or system image, ensure that you do not run the source and target images or virtual machines on the same network at the same time.

For example, if you use Converter Standalone to test the viability of running a Virtual PC virtual machine as a VMware virtual machine without first decommissioning the original Virtual PC machine, you must resolve the duplicate ID problem. To resolve this problem, use the optional View/Edit step in the Conversion wizard.

Changes That Conversion Causes to Virtual Hardware

Most migrated applications function correctly in the VMware virtual machine because their configuration and data files have the same location as the source virtual machine. Applications might not work if they depend on specific characteristics of the underlying hardware such as the serial number or the device manufacturer.

The following hardware changes might occur after virtual machine migration:

- CPU model and serial numbers (if activated) can be different after the migration. These numbers correspond to the physical computer hosting the VMware virtual machine.
- Ethernet adapter can be different (AMD PCNet or VMXnet) with a different MAC address. Each interface IP address must be individually reconfigured.
- Graphics card can be different (VMware SVGA card).
- The number of disks and partitions remains the same, but each disk device can have a different model and different manufacturer strings.
- Primary disk controllers can be different from the source machine's controllers.
- Applications might not work if they depend on devices that are not available from within a virtual machine.

TCP/IP Port Requirements for Conversion

Converter Standalone uses specific ports in the conversion process.

For a list of required TCP/IP ports during conversion, see Table 2-9.

Table 2-9. Converter Standalone Port Requirements

Communication Path	Port
Converter Standalone server to remote Windows powered-on machine	445, 139, 9089
Converter Standalone server to remote Linux powered-on machine	22
Helper virtual machine to remote Linux powered-on machine	22
Converter Standalone to a VMware vCenter Server	443
Converter Standalone to ESX 3.x	443
Converter Standalone server to a helper virtual machine	443
Powered-on machine to a VMware vCenter Server	443
Powered-on machine to ESX 3.x	443, 902

Common Requirements for Remote Hot Cloning of Windows Operating Systems

The following information can help you avoid issues related to permissions and network access when you perform hot cloning of Windows operating systems.

To ensure successful remote hot cloning of Windows platforms, verify the following items on the source machine before you start the application:

- Ensure that Simple File Sharing is turned off.
- Ensure that file and printer sharing is not blocked by Windows Firewall.

Ensure That Windows Firewall Does Not Block File and Printer Sharing

If Converter Standalone fails to connect to a remote Windows XP machine and issues a `bad username/password` error message, ensure that file and printer sharing is not blocked by Windows Firewall.

Procedure

1 Select **Start > Settings > Control Panel > Administrative Tools > Local Security Policy**.

2 In the Security Settings list to the left, select **Local Policies > Security Options**.

3 In the policies list to the right, select **Network access: Sharing and Security model for local accounts**.

4 Verify that **Classic – local users authenticate as themselves** is selected.

What to do next

For troubleshooting information about file and printer sharing, see the Microsoft TechNet Web site.

Turn Off Simple File Sharing on Windows XP Professional

To control permissions for individual users, you must turn off Simple File Sharing. Turning Simple File Sharing off does not turn off the Shared Documents feature. Use the Simple File Sharing UI, located in the folder's properties, to configure share and file permissions.

For Windows XP Professional operating systems joined to a workgroup, the Simple File Sharing UI is turned on by default. Windows XP Professional operating systems joined to a domain use only the classic file sharing and security interface.

Procedure

1 Select **Start > Settings > Control Panel > Folder Options**.

2 Click the **View** tab and deselect **Use Simple File Sharing (Recommended)**.

For additional information about turning simple file sharing on or off, see the Microsoft TechNet Web site.

Installing and Uninstalling VMware vCenter Converter Standalone

3

This information describes the basic steps for installing and uninstalling Converter Standalone.

This chapter includes the following topics:

- "Install Converter Standalone in Windows," on page 29
- "Uninstall, Modify, or Repair Converter Standalone in Windows," on page 30
- "Perform a Command-Line Installation in Windows," on page 31
- "Command-Line Options for Windows Installation," on page 31
- "Perform a Local Installation in Linux," on page 32
- "Perform a Client-Server Installation in Linux," on page 33
- "Uninstall Converter Standalone in Linux," on page 34
- "Modify or Repair Converter Standalone in Linux," on page 34
- "Connect to a Remote Converter Standalone Server," on page 35

Install Converter Standalone in Windows

You can install Converter Standalone onto a physical or a virtual machine. The Local setup installs the Converter Standalone server, Converter Standalone agent, and Converter Standalone client for local use. For remote access, you can create a Client-server installation. With remote access you can create and manage conversion tasks remotely.

When you install the Converter Standalone agent and the Converter Standalone server, the local machine becomes a server for conversions, which you can manage remotely. When you use the local machine with the Converter Standalone client, you can convert the full range of machine types.

If you install only Converter Standalone client, you can connect to remote Converter Standalone server. You can then use the remote machine to convert hosted virtual machines, managed virtual machines, or remote physical machines.

If you install Remote Access, local and multiple remote Converter Standalone clients can connect to the local Converter Standalone server.

Prerequisites

Make sure your system meets the Converter Standalone system requirements.

If you have Converter 3.0.x installed and your machine runs Windows Vista, you must uninstall Converter 3.0.x manually before you install Converter Standalone 4.0.1.

Procedure

1 Download the latest version of Converter Standalone from the VMware Web site.

2 Check the number of the build, which should be in the local directory to which you downloaded the installer.

3 Navigate to the folder that contains the installer file you downloaded and double-click the `VMware-converter-4.x.x-<xxxxx>.exe` file, where `<xxxxx>` is the number of the build.

4 Click **Next**.

5 Select **I accept the terms in the License agreement** and click **Next**.

6 Select the location folder for Converter Standalone on the Destination Folder page and click **Next**.

   The default location is `C:\Program Files\VMware\VMware vCenter Converter Standalone`.

7 (Optional) To install to another location, click **Change** and browse for the new location.

8 On the Setup Type page, select **Local installation** or **Client-Server installation (advanced)** and click **Next**.

9 (Optional) On the Custom Setup page, make a selection and click **Next**.

   Converter Standalone server, Converter Standalone agent, Converter Standalone client, and Remote access are selected by default.

10 (Optional) If you select **Client-Server Installation (advanced)** from the Setup Type page, do the following:

   a Enter the HTTPS port service number.

   b Enter the HTTP port service number.

   c Enter the Agent port service number.

11 On the Ready to Install the Program page, click **Install**.

12 (Optional) If you install the Converter Standalone client, you can run Converter Standalone now.

   The **Run Converter Standalone Client now** check box is selected by default. To finish installation without starting the application at this time, deselect the check box before you click **Finish**.

13 Click **Finish**.

   A prompt might ask you to restart your system before you use Converter Standalone.

VMware vCenter Converter Standalone is installed and ready to use.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Uninstall, Modify, or Repair Converter Standalone in Windows

You can use either the Microsoft Windows Add or Remove Programs utility from the Control Panel to uninstall Converter Standalone or the VMware vCenter Converter Standalone installer wizard. The installer wizard also allows you to modify or repair Converter Standalone.

Prerequisites

For Windows Vista systems, you must stop VMware Converter Service before you run the Converter Standalone 4.0.1 installer to upgrade Converter 3.0.x to Converter Standalone 4.0.1.

Procedure

1 To start the Converter Standalone installer, do one of the following:

- Go to the folder that contains the installer file and double-click the `VMware-converter-4.x.x-<xxxxx>.exe` file, where `<xxxxx>` is the number of the build. Check the number of the build to see if it matches the build you installed.
- Select **Add or Remove Programs** from the Control Panel, select Converter Standalone from the list, and click **Change**.

2 Click **Next**.

3 On the Program Maintenance page, select one of the options and click **Next**.

The Custom Setup page or the Ready to Repair page appears.

4 Click **Install**.

When Converter Standalone is removed or repaired, you might have to restart your system before you can use Converter Standalone. If so, a prompt appears.

5 Click **Finish**.

The Converter Standalone Installer closes.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Perform a Command-Line Installation in Windows

You can install Converter Standalone from the MS-DOS Command prompt or by writing a Windows batch file (`.bat`) to automate the installation process.

Prerequisites

You must have Administrator privileges.

Procedure

- At the command line, install Converter Standalone silently with the log file written to the `temp` directory.

```
VMware-converter-<build>.exe /s /v"/qn ADDLOCAL=ALL /l*v %TEMP%\vmconvservermsi.log"
```

For more command-line options, see "Command-Line Options for Windows Installation," on page 31.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Command-Line Options for Windows Installation

You can use the command-line installation options to install Converter Standalone from the MS-DOS Command prompt in Windows or by writing a Windows batch file (`.bat`).

For a list of options to perform command-line installation, see Table 3-1.

Table 3-1. Command-Line Options

Option	Action
`/s`	Does not display the Windows Installer version check.
`/v"<params>`	Passes parameters to the `msiexec.exe` file.

Table 3-1. Command-Line Options (Continued)

Option	Action
`/qn`	Runs the `msi` command in silent mode.
`/qb`	Runs the `msi` command in basic mode.
`/qf`	Runs the `msi` command in full mode.
`/l*v <Logfile>`	Record login information in the file provided in <Logfile>.
`/x`	Uninstall VMware vCenter Converter Standalone.
`ADDLOCAL="ALL"`	Installs full package. Parameter is case-sensitive.
`PROPERTY=<property value>`	Sets the value of a property to <property value>.
`VMCE_HTTP_PORT`	Sets the HTTP port. The default is 80. Remote machines connect to the server through this port to download the Converter Standalone client.
`VMCE_HTTPS_PORT`	Set the HTTPS port. The default is 443. Remote Converter Standalone clients connect to this port on the server and submit conversion tasks.
`VMCE_AGENT_PORT`	Sets an Agent port. The default is 9089. Remote Converter Standalone agents connect to this port to convert this machine.

Perform a Local Installation in Linux

You can install the Converter Standalone client, the Converter Standalone server, and the Converter Standalone agent on a Linux distribution for local use. You cannot manage the installed Converter Standalone server with a remote Converter Standalone client.

The Converter Standalone Linux Installer requires root privileges to install all Converter Standalone components.

You run the Linux installation of Converter Standalone in command-line mode.

Prerequisites

Make sure your Linux distribution is supported and that system requirements are met.

Procedure

1 Download the latest Linux version of Converter Standalone from the VMware Web site.

   The filename is similar to `VMware-converter-4.x.x-<xxxxxx>.tar.gz`, where <xxxxxx> is the number of the build.

2 Go to the directory to which you downloaded the installer archive.

```
cd <path_to_download_directory>
```

3 Extract the archive in the current directory.

```
tar zxvf VMware-converter-4.x.x-<xxxxxxx>.tar.gz
```

4 Navigate to the extracted directory and run the installation executable file.

```
cd vmware-converter-distrib
sudo ./vmware-install.pl -d
```

5 Press Enter to view the End User License Agreement.

   To accept the license agreement, scroll down the document, type **`yes`** and press Enter again.

Wait for the installation to complete copying the files. If you install the Converter Standalone server, a message appears that informs you that it is started.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Perform a Client-Server Installation in Linux

You can select which Converter Standalone components to install when you perform a client-server installation on a Linux distribution. You can also install remote access to manage your Converter Standalone server with a remote Converter Standalone client.

You run the Linux installation of Converter Standalone in command-line mode.

Prerequisites

- Make sure your Linux distribution is supported and that system requirements are met.
- You must have root privileges.

Procedure

1. Download the latest Linux version of Converter Standalone from the VMware Web site.

   The filename is similar to `VMware-converter-4.x.x-<xxxxxx>.tar.gz`, where <xxxxxx> is the number of the build.

2. Go to the directory to which you downloaded the installer archive.

   ```
   cd <path_to_download_directory>
   ```

3. Extract the archive in the current directory.

   ```
   tar zxvf VMware-converter-4.x.x-<xxxxxxx>.tar.gz
   ```

4. Navigate to the extracted directory and run the installation executable file.

   ```
   cd vmware-converter-distrib
   sudo ./vmware-install.pl
   ```

5. Press Enter to view the End User License Agreement.

   To accept the license agreement, scroll down the document, type **yes** and press Enter again.

6. Press Enter to install the Converter Standalone client.

   The default is set to **yes**.

7. Press Enter to install the Converter Standalone server.

   The default is set to **yes**.

   A prompt asks in which directory to install the executable files.

8. Press Enter to continue without changing the installation directory.

   To change the installation directory, type a new path and press Enter.

9. Press Enter to continue without changing the directory where library files are installed.

   To change the library file installation directory, type a new path and press Enter.

   If the directory does not exist, a prompt asks if you want to create it. The default is set to **yes**.

   The installation requires the directory that contains the `init` file directories.

10 If the directory that contains the `init` file directories (`rc0.d/` to `rc6.d/`) in your distribution is `/etc`, press Enter.

   If the directory is different, provide the new path and press Enter.

11 If the directory that contains the `init` scripts is `/etc/init.d`, press Enter.

   If the directory is different, provide the new path and press Enter.

   A prompt asks if you want to install remote access in the Converter Standalone server.

12 (Optional) To activate remote access, type **`yes`** and press Enter.

   a Type the HTTP port to use. The default is 80.

   b Type the HTTPS port to use. The default is 443.

13 Press Enter if the directory that contains the theme icons for Converter Standalone is `/usr/share/icons`.

   If the directory is different, provide a new path and press Enter.

14 Press Enter if the directory that contains the desktop menu entry files is `/usr/share/applications`.

   If the directory is different, provide a new path and press Enter.

Wait for the installation to finish copying the files. If you install the Converter Standalone server, a message appears that informs you that it is started.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Uninstall Converter Standalone in Linux

Uninstall Converter Standalone to remove all of its components from a Linux system.

Prerequisites

You must have root privileges.

Procedure

◆ Run `sudo /usr/bin/vmware-uninstall-converter.pl`.

A message appears that informs you that Converter Standalone is successfully removed.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Modify or Repair Converter Standalone in Linux

You can modify or repair a Converter Standalone installation by running the installer executable file from the command-line.

Prerequisites

You must have root privileges.

Procedure

- Run the `sudo ./vmware-install.pl` command from the directory you extracted from the installation archive.

  Wait for the installation to finish copying the files.

  This command deletes any previous installations and installs a new version of Converter Standalone.

If you install the Converter Standalone server, a message informs you that the Converter Standalone server daemon is started.

What to do next

Now you can use Converter Standalone to convert physical or virtual machine sources to virtual machine or virtual appliance destinations.

Connect to a Remote Converter Standalone Server

You can use the Converter Standalone client to connect to a Converter Standalone server installed on a remote machine.

Prerequisites

You must have the Converter Standalone server and agent installed on the remote machine.

Procedure

1. Start Converter Standalone.
2. Depending on your installation type, select the procedure to follow.

Option	Action
Local installation	a Select **Administration > Connect to another server**. b On the Converter Standalone login page, select **Enter the IP address or host name of the Converter Standalone server**. c Provide the IP address and Administrator credentials, and click **Login**.
Client-server installation with remote access	a On the Converter Standalone login page, select **Enter the IP address or host name of the Converter Standalone server**. b Provide the IP address and Administrator credentials, and click **Login**.

What to do next

You can now use the remote Converter Standalone server to set up and manage conversion tasks.

Converting Machines 4

This information describes how to create a conversion task to convert physical machines to a variety of destinations. You can use local or remote hot cloning, virtual machines, virtual appliances, and third-party system images as destinations.

Convert a Machine

The approach you take for creating your virtual machine is determined by the type of source and the type of destination that you select.

Source type

A powered-on physical or virtual machine, a VMware Infrastructure virtual machine running on an ESX host, a virtual appliance, or a standalone virtual machine.

Standalone virtual machines include VMware virtual machines, backup images, and third-party virtual machines such as VMware Workstation, VMware Server, VCB, Acronis True Image, Microsoft Virtual PC and Virtual Server, Symantec Backup Exec Server Recovery (formerly known as LiveState Recovery), LiveState Recovery, StorageCraft, Parallels Desktop for Microsoft Windows and Mac OS, Parallels Workstation, and Norton Ghost (only `.sv2i`) images.

Table 2-3 contains a full list of supported source types and product versions.

Destination type

ESX host, ESX host that vCenter Server manages, a virtual appliance, or a VMware standalone virtual machine.

Table 2-6 contains a full list of supported destination types and product versions.

Procedure

1 Start the Wizard for a Conversion on page 38

   The Conversion wizard helps you specify your source machine, the destination for the machine, and to select the machine's settings.

2 Select a Source to Convert on page 38

   You can select from several source options for the type of machine to convert.

3 Select a Destination for the New Virtual Machine on page 42

   A newly created virtual machine must have a destination in which to store it. When you set up a conversion task, you must select a destination.

4 View Setup Options for a New Virtual Machine on page 45

   Depending on the selected source machine and destination type, the View/Edit Options page provides setup options for the destination virtual machine or virtual appliance.

5 View the Summary of a Conversion Task on page 64

   On the Ready to Complete page, you can view a summary of the new conversion task before you add it to the task list.

Start the Wizard for a Conversion

The Conversion wizard helps you specify your source machine, the destination for the machine, and to select the machine's settings.

Procedure

1 Start the VMware vCenter Converter Standalone application.

2 Click **Convert Machine** in the application menu.

The Specify Source page introduces the conversion process: Specify Source, Specify Destination, View/Edit Options, and Ready to Complete.

What to do next

You can now select the source machine type to convert.

Select a Source to Convert

You can select from several source options for the type of machine to convert.

If you are converting a virtual machine that runs on a VMware DRS cluster that vCenter Server manages, set VMware DRS Power Management (DPM) to **manual** to avoid DPM powering off the ESX hosts used by Converter Standalone. When the conversion process completes, restore DPM to its original settings. For information about how to change DPM settings, see the *Resource Management Guide*.

- Select a Powered-On Machine Source on page 38

  You can select a local or remote running machine as a source for your conversion.

- Select a VMware Infrastructure Virtual Machine Source on page 39

  You can convert a virtual machine that resides on an ESX host or ESX host that vCenter Server manages.

- Select a VMware Workstation or Other VMware Virtual Machine Source on page 40

  You can convert a VMware desktop virtualization product machine.

- Select a Backup Image or Third-Party Virtual Machine Source on page 40

  You can convert a virtual machine that is a third-party virtual machine or a backup image.

- Select a Virtual Appliance Source on page 41

  You can convert a virtual appliance to a VMware Infrastructure virtual machine or a standalone virtual machine, such as Workstation 6.x.

Select a Powered-On Machine Source

You can select a local or remote running machine as a source for your conversion.

Prerequisites

Before you select a machine source for conversion, complete the following items:

- For remote Windows sources, turn off the firewall. For remote Linux sources, enable SSH.
- Make sure that another conversion task is not using the source you select.

- If the source machine is local, the Converter Standalone server and the Converter Standalone agent must be installed on it.
- If the source machine is remote, manually remove from it any previous VMware Converter 3.x installations.
- To convert a remote powered-on machine, you must have Administrator credentials.
- To convert a remote Windows powered-on machine, the machine must have file sharing disabled.
- To convert a local Linux powered-on machine, you must treat it as a remote machine. Provide its IP address and root credentials to connect.

Procedure

1 On the Specify Source page, select **Powered-on machine** from the **Select source type** drop-down menu.

2 Select an option that corresponds to your source machine location.

Source Location	Action
Local	Click **This local machine**. For local machines, the authorization is set to the current user and cannot be changed. If remote access is enabled during Converter Standalone installation, this local machine is treated as a remote physical machine.
Remote	a Click **A remote machine**. b Provide the IP address or name of the machine and administrator credentials. c Select the operating system type from the **OS Family** drop-down menu.

3 (Optional) Click **View source details** to view information about the machine you are converting.

4 Click **Next**.

The Specify Destination page appears.

What to do next

You can now select the destination for your new virtual machine.

Select a VMware Infrastructure Virtual Machine Source

You can convert a virtual machine that resides on an ESX host or ESX host that vCenter Server manages.

You cannot convert a running or suspended virtual machine.

Prerequisites

GRUB must be installed as the boot loader to convert multiboot virtual machines. LILO is not supported.

If you connect to a vCenter Server that is part of a multi-vCenter Server environment, Converter Standalone displays only ESX hosts managed directly by the currently connected vCenter Server.

Procedure

1 On the Specify Source page, select **VMware Infrastructure virtual machine** from the **Select source type** drop-down menu.

2 Provide the IP address or host name and credentials to authenticate with the ESX host or the VMware vCenter Server.

3 Click **Next**.

The Machine Name page appears, displaying the IP address and the inventory of the ESX host or the VMware vCenter Server.

4 From the inventory list, select the virtual machine to convert.

5 (Optional) If you are connected to a VMware vCenter Server, select an option from the **Specify machine with** drop-down menu.

Option	Description
Hosts and Clusters View	Provides a view of the set of virtual machines that run on a particular host, cluster, or resource pool. This view does not provide a complete list of available virtual machines and templates in the vCenter Server.
VM and Templates View	Displays all virtual machines and templates.
VM List	Provides an alphabetical list of all virtual machines and allows you to search them by name. NOTE This search is not case-sensitive.

6 (Optional) To view more details about the machine you are converting, click **View Source Details**.

7 Click **Next**.

The Specify Destination page appears.

What to do next

You can now select the destination for your new virtual machine.

Select a VMware Workstation or Other VMware Virtual Machine Source

You can convert a VMware desktop virtualization product machine.

IMPORTANT To convert a running machine, read "Select a Powered-On Machine Source," on page 38. To convert a suspended machine, either power it off and use the current procedure or power it on and select a powered-on machine as the source.

Prerequisites

Verify that your machine is a supported VMware Desktop products virtual machine. For a list of supported products, see "Supported Source Types," on page 21.

Procedure

1 On the Specify Source page, select **VMware Workstation or other VMware virtual machine** from the **Select source type** drop-down menu.

2 Browse for the `.vmx` virtual machine file to convert.

3 (Optional) To view information about the machine you are converting, click **View source details**.

4 Click **Next** to proceed to the Specify Destination page.

If the source virtual machine you select is password protected, the Enter password pop-up window appears. Type your password to proceed.

What to do next

You can now select the destination for your new virtual machine.

Select a Backup Image or Third-Party Virtual Machine Source

You can convert a virtual machine that is a third-party virtual machine or a backup image.

Prerequisites

Verify that your machine is a supported backup image or third-party virtual machine.

"Supported Source Types," on page 21 contains supported third-party file types and supported versions.

Procedure

1 On the Specify Source page, select **Backup image or Third-party virtual machine** from the **Select source type** drop-down menu.

2 Browse for the source virtual machine or image.

3 (Optional) To view information about the selected source, click **View source details**.

4 Click **Next** to proceed to the Specify Destination page.

What to do next

You can now select the destination for your new virtual machine.

Select a Virtual Appliance Source

You can convert a virtual appliance to a VMware Infrastructure virtual machine or a standalone virtual machine, such as Workstation 6.x.

The data you can view on the Appliance details page depends on the OVF version of the source you selected. Only OVF 1.0 sources can contain deployment configurations. If OVF 0.9 and OVF 1.0 source virtual appliances do not contain deployment configurations, you can only view the virtual appliance details.

For OVF 1.0 sources that contain deployment configurations, you can also select the product configuration. Selecting a different product configuration might affect the hardware settings and properties default values of the target virtual machine created to run on a vCenter Server 4.0 or a Workstation destination.

Prerequisites

Converter Standalone supports, as sources, OVF 0.9 and OVF 1.0 virtual appliances that contain one virtual machine. Virtual appliances that contain multiple virtual machines are not supported.

If you select an OVF 1.0 source and it contains at least one required product with properties, you can only convert it to a vCenter Server 4.0 destination. ESX 4.0 is not supported as a destination for OVF 1.0 sources that contain required products with properties. If the source OVF does not contain any required properties, you can select an ESX 4.0 hosted destination as well.

Procedure

1 On the Specify Source page, select **Virtual appliance** from the **Select source type** drop-down menu.

2 Complete the **Choose virtual appliance** pane.

   a To convert a virtual appliance from your hard drive or a network location, select **File System** from the **Location** drop-down menu and browse for your virtual appliance.

   b To convert a virtual appliance uploaded on a Web server, select **URL** from the **Location** drop-down menu and enter the URL in the **Enter the web location** field.

3 Click **Next**.

The Appliance Details page appears.

4 (Optional) View information about the virtual appliance source and select the product configuration for sources that support product configurations.

- Click **Advanced** under the Virtual appliance details pane to toggle between the Basic and Advanced modes of the virtual appliance details view of an OVF source that does not contain deployment configurations.
- Use the **Select configuration** drop-down menu to change the product configuration of an OVF 1.0 source with deployment configurations and click **Next**.

  The device settings and default property values on the View/Edit Options page might vary, depending on the product configuration you select.
- If you receive a prompt, select **I accept the terms in all license agreements** on the EULA page and click **Next**.

The Specify Destination page appears.

What to do next

You can now select the destination for the new virtual machine.

Select a Destination for the New Virtual Machine

A newly created virtual machine must have a destination in which to store it. When you set up a conversion task, you must select a destination.

Converter Standalone retains the last selected destination and displays that destination the next time you create a conversion task. Use the drop-down menus to change the destination if necessary.

Converter Standalone does not support as destinations clusters and cluster-level resource pools. If you are converting a virtual machine to run on a cluster that vCenter Server manages, select an ESX host within the cluster. When you use a VMware DRS cluster as a destination, set VMware DRS Power Management (DPM) to **manual**. This setting avoids DPM powering off the ESX hosts that Converter Standalone uses. When the conversion process completes, restore DPM to its original settings.

NOTE For Linux P2V conversion tasks, the only supported destination is a VMware Infrastructure virtualization product.

- Select a VMware Infrastructure Virtual Machine Destination on page 42

  To create a virtual machine to run on an ESX host that vCenter Server manages or on a standalone ESX host, select a VMware Infrastructure virtual machine destination.
- Select a Virtual Appliance Destination on page 44

  You can export a virtual machine to a virtual appliance, making it available to other users to import into their inventories. The resulting virtual appliance is an OVF 1.0 appliance and contains one virtual machine.
- Select a VMware Workstation or Other VMware Virtual Machine Destination on page 44

  You can create a standalone virtual machine or Workstation virtual machine to run outside an ESX host or an ESX host that vCenter Server manages.

Select a VMware Infrastructure Virtual Machine Destination

To create a virtual machine to run on an ESX host that vCenter Server manages or on a standalone ESX host, select a VMware Infrastructure virtual machine destination.

You can convert your source machines to ESX 3.x; Embedded ESX 3i; vCenter Server 2.0, 2.5; and vSphere 4.0.

Prerequisites

To convert virtual machines to vCenter Server destinations with Converter Standalone, you must have the following vCenter Server permissions set at the datacenter level:

- **Datastore.Browse Datastore**
- **Datastore.AllocateSpace**, full permissions.
- **Virtual Machine.Inventory**
- **Virtual Machine.Configuration**, full permissions.
- **Virtual Machine.Interaction.Power On**. Needed only if you power on the target virtual machine after conversion.
- **Virtual Machine.Provisioning.Allow Disk Access**
- **Resource.Assign Virtual Machine To Resource Pool**
- **Network.AssignToVM**

Procedure

1. On the Destination Type page, select **VMware Infrastructure virtual machine** from the drop-down menu.
2. Enter the required information.
   a. From the drop-down menu, select the destination server or enter its IP address or host name if it is not listed.
   b. Type your credentials for the destination server.
3. Click **Next**.
4. On the Host & Cluster page, specify the resources for the converted virtual machine.
   a. Assign a name to the virtual machine you are creating.

      The vCenter Server Inventory pane might contain multiple hosts, clusters, and datacenters.
   b. Select the host or resource pool within a host from which to run the virtual machine.
   c. Select a datastore from the drop-down menu.

      The datastore capacity appears under the drop-down menu. VMware recommends that you choose a datastore that can accommodate all files of the source virtual machine. You can check the source size above the selected datastore.
   d. For vSphere 4.0 destinations, select the virtual machine version from the drop-down menu.

Option	Description
Version 4	Select when sharing storage or virtual machines with ESX Server versions 3.x.
Version 7	Select for the latest virtual machine features. This hardware version is not supported for ESX 3.x destinations.

      Note Settings on the View/Edit Options page might vary, depending on the virtual hardware version you select.

   e. Click **Next**.

You selected to create a virtual machine to run on an ESX host that vCenter Server or a standalone ESX host manages.

What to do next

On the View/Edit Options page, you can make more precise settings to the conversion task.

Select a Virtual Appliance Destination

You can export a virtual machine to a virtual appliance, making it available to other users to import into their inventories. The resulting virtual appliance is an OVF 1.0 appliance and contains one virtual machine.

You cannot select a virtual appliance destination for physical machine sources or virtual appliance sources.

The OVF created as a result of this conversion is not compatible with Workstation 6.5.x, nor with Converter 3.0.3.

Prerequisites

The source virtual machine must be powered off.

Procedure

1 On the Destination page, select **Virtual Appliance** from the drop-down menu.

2 In the **Virtual appliance details** pane, type the virtual appliance name in the **Name** text box.

3 Click **Browse** to select a destination location.

   The destination folder can be local or a remote machine shared over the network.

4 (Optional) If you are connected to a remote Converter Standalone server, click **Connect as** and provide the user credentials to be used when connecting to the destination machine.

   You must manually type the path to the destination.

5 Select the **Distribution format** from the drop-down menu.

   You can create virtual appliance packages that contain monolithic compressed `.vmdk` files only. You can store the resulting files in an `.ovf` folder or place them in a single `.ova` tarred file.

6 Click **Next** to customize the virtual appliance.

You selected to export a virtual machine to a virtual appliance.

What to do next

On the View/Edit Options page, you can make more precise settings to the conversion task.

Select a VMware Workstation or Other VMware Virtual Machine Destination

You can create a standalone virtual machine or Workstation virtual machine to run outside an ESX host or an ESX host that vCenter Server manages.

You can convert to a standalone virtual machine or a Workstation virtual machine to run in VMware Workstation 5.0, 6.0 or 6.5; VMware Fusion 1.0 or 2.0; VMware Player 1.0, 2.0 or 2.5; VMware ACE 2.0 or 2.5; or VMware Server 1.0 or 2.0.

Hosted destinations are not supported for live Linux sources.

Procedure

1 On the Specify Destination page, select **VMware Workstation or other VMware virtual machine** from the drop-down menu.

2 Select the **VMware product** to work with the new virtual machine.

3 In the **Virtual machine details** pane, type a name for the converted virtual machine and browse to select its destination location.

   The name can be 80 characters long, is case-sensitive, and must be unique within the virtual machine folder. The name can contain alphanumeric characters, underscores (_), and hyphens (-).

4 (Optional) If you are connected to a remote Converter Standalone server, click **Connect As** and enter the address and user credentials.

   - If the source is a remote physical machine, enter the address and user credentials for a location that is accessible from that source machine.
   - If the source is another virtual machine, enter the address and user credentials for a location that is accessible to the machine that runs the remote Converter Standalone server.

5 Click **Next**.

You selected to create a standalone virtual machine to run on one of the supported VMware products.

What to do next

On the View/Edit Options page, you can make more precise settings to the conversion task.

View Setup Options for a New Virtual Machine

Depending on the selected source machine and destination type, the View/Edit Options page provides setup options for the destination virtual machine or virtual appliance.

- Select the Destination Folder on page 46

  The **Destination Attributes** option is available for VMware Infrastructure destinations. This option allows you to determine the logical relationship of the new virtual machine to the virtual environment. You select the folder to which the target virtual machine belongs.

- Organizing the Data to Copy to the Destination Machine on page 46

  Depending on the selected source and destination, you can select what data to copy to the destination virtual machine. You can also select the data's location on specific datastores in your virtual environment.

- Change Device Settings on the New Virtual Machine on page 53

  You can change the number of processors, the amount of memory, and the disk controller type to run on the destination virtual machine.

- Change Network Connections on the Destination on page 54

  You can change the number of network adapters to appear on the destination virtual machine.

- Control the Status of Windows Services During Conversion on page 54

  You can change the starting mode of the source Windows services on the target virtual machine and stop the Windows services on the source machine during the conversion. Stopping some services on the source machine allows easier synchronization between the source and the target machine.

- Advanced Customization Options on page 55

  Before you start the conversion, you can use the View/Edit Options page in the Conversion wizard to adjust advanced settings. These settings include postconversion synchronization between source and destination, postconversion power state of the source and destination virtual machine, VMware tools installation, reconfiguration of destination virtual machine, destination computer information, and system restore checkpoints.

- Set Up the Network for the Helper Virtual Machine on page 60

  When converting physical machine sources that run Linux, Converter Standalone creates a Helper virtual machine on the destination host (ESX or vCenter Server). The Helper virtual machine needs network access to the source machine to clone the source files. Default conversion settings enforce automatic acquisition of IP address and DNS server for the Helper virtual machine. The following procedure allows you to setup this network connection manually.

- Customize a VMware Infrastructure Virtual Machine on page 61

  When you convert to a VMware Infrastructure virtual machine, you can adjust some of its attributes. If you start the conversion process without changing any attributes, Converter Standalone applies the default conversion settings.

- Customize a Standalone or Workstation Virtual Machine on page 61

  When you convert to a standalone virtual machine, you can adjust some of its attributes.

- Customize a Virtual Appliance on page 62

  You can edit the target attributes when you convert a virtual machine source to a virtual appliance.

- Configure the Product Properties of an Exported Virtual Appliance on page 63

  For virtual appliance destinations, you can add custom product properties to the target OVF package.

Select the Destination Folder

The **Destination Attributes** option is available for VMware Infrastructure destinations. This option allows you to determine the logical relationship of the new virtual machine to the virtual environment. You select the folder to which the target virtual machine belongs.

Procedure

1. On the **Destination** page, select ESX and a datastore to accommodate the new virtual machine and click **Next**.
2. On the View/Edit Options page, click **Destination Attributes**.

   The list of all folders available on the selected datastore appears to the right.
3. Select a folder to contain the new virtual machine.
4. Select another option to set or click **Next** to view a summary of the conversion task and submit it to the task list.

What to do next

Now you can select another option to set or click **Next** to view a summary of the conversion task.

Organizing the Data to Copy to the Destination Machine

Depending on the selected source and destination, you can select what data to copy to the destination virtual machine. You can also select the data's location on specific datastores in your virtual environment.

For detailed information on data copy types, see Table 4-1.

Table 4-1. Data Copy Types

Data Copy Type	Supported Sources and Destinations	Description
Select volumes to copy	Source operating systems that support disk volumes	Volume-based cloning allows resizing the source volumes on the destination machine, volume reordering, and selection.
Select disks to copy	Virtual machine sources and hosted or managed destinations	Disk-based cloning does not allow resizing the source disks on the destination machine. For hosted destinations, you can change the disk type. For VMware Infrastructure destinations, you can change the datastore. You can locate source disks to different datastores on managed destinations (VMware ESX, ESXi, or vCenter Server).
Linked clone	Hosted sources and hosted destinations	A linked clone allows you to create a VMware virtual machine that shares the virtual disk of the source virtual machine or system image.

Depending on the destination you select, several target disk types are available. To support target virtual disks on FAT file systems, divide the source into 2GB files. For detailed information on target virtual disks types, see Table 4-2.

Table 4-2. Destination Disk Types

Destination	Available Disk Types	
VMware Infrastructure virtual machine	**Flat**	Copies the entire source disk size to the destination, regardless of its used and free space.
	Thin	For managed destinations that support thin provisioning, creates an expanding disk on the destination. For example, if the source disk size is 10GB, but only 3GB are used space, the created destination disk is 3GB but potentially expands to 10GB.
VMware Workstation or other VMware virtual machine	**Pre-allocated**	Copies the entire source disk size to the destination, regardless of its used and free space.
	Not pre-allocated	Creates an expanding disk on the destination. For example, if the source disk size is 20GB, but only 5GB are used space, the created destination disk is 5GB but potentially expands to 20GB. Take this measurement into account when you calculate the free disk space on the destination datastore.
	2GB Split pre-allocated	Splits the source disk into 2GB sections on the destination.
	2GB Split not pre-allocated	Creates 2GB sections on the destination that include only the real used space on the source disk. As the destination disk grows, new 2GB sections are created to accommodate the new data until the original source disk size is reached.

Distribute Disks over Several Datastores

For managed destinations, disk-based cloning allows you to copy virtual disks to different datastores within your virtual environment.

Prerequisites

The destination for the virtual machine must have more than one datastore. The target datastores must be online and connected when the target virtual machine starts up.

Disk-based cloning is not supported for physical machine sources.

For Linux hosts, you can perform only disk-based cloning.

Procedure

1 On the View/Edit Options page, click **Data to copy** in the left pane.

2 From the **Data to copy** drop-down menu, select **Copy all disks and maintain layout**.

   A list of all virtual disks in the source machine appears.

3 In the Disk column, select a source virtual disk.

4 In the Type column, select the disk type from the drop-down menu.

The options depend on the source machine you select.

Available Disk Type	Description
Flat	Copies the entire source disk size to the destination, regardless of its used and free space.
Thin	Creates a thin provisioned disk. This option is available for managed destinations that support thin provisioning.

5 In the **Target Datastore** column, use the drop-down menus to select a destination datastore for each disk.

6 (Optional) To change the datastore to accommodate the `*.vmx` destination configuration file, click **Back** and select the datastore from the drop-down menu.

This menu appears only for virtual machine destinations in a VMware virtual infrastructure.

7 Click **Next** to view a summary of the conversion task.

8 Click **Finish** to add the task to the task list.

The target virtual disks are saved to the datastores you specified in the conversion task.

Distribute Volumes over Several Datastores

To ease storage management, you can use the View/Edit Options page to migrate to separate disks all volumes except the active and system volumes.

You can convert individual volumes and corresponding virtual disks and place the individual disks on different datastores. This ability allows you to have more direct control over storage limitations. You can create a separate virtual disk for each volume for all sources, except `.ovf` source images. Volume-based cloning depends on the operating system of the host machine. It is not supported for Linux hosts. Volume-based cloning is also the only possible cloning type for physical machine sources.

Volume-based cloning allows you to choose which volumes to copy to the destination virtual disks, and to store separate source volumes in separate virtual disks. When you use managed destinations, you can select different datastores for the destination virtual disks.

Prerequisites

To change datastores, the virtual machine destination must have more than one datastore.

Procedure

1 On the View/Edit Options page, click **Data to copy** in the left pane.

2 From the **Data copy type** drop-down menu, select **Select volumes to copy**.

A list of all source volumes appears.

3 (Optional) To change the datastore to accommodate the `*.vmx` destination configuration file, click **Back** and select the datastore from the drop-down menu.

This menu appears only for virtual machine destinations in a VMware infrastructure.

4 Modify the settings in the source volumes list.

5 (Optional) To save disk space on the destination, select **Ignore page file and hibernation file**.

This optimization depends on the source operating system. This optimization saves disk space on the destination virtual machine by not copying to it the page file and hibernation file.

6 (Optional) Click **Advanced** to create new destination virtual disks, move volumes across destination virtual disks, or delete destination disks.

   On the **Source Layout** tab, you can select which volumes to copy to the destination and select the target datastores to accommodate them.

   On the **Target Layout** tab, you can configure the destination virtual disks, create disks or remove existing disks, or move source volumes across disks. For detailed instructions, see "Move a Source Volume to a Target Virtual Disk," on page 50 and "Create or Delete a Target Disk," on page 50

7 Select another option to set or click **Next** to view a summary of the conversion task.

The volumes you selected are saved to the relevant destination virtual disks.

Create or Delete a Target Disk

Converter Standalone copies all source volumes to one target virtual disk. You can create and delete target disks to rearrange the source volumes.

This option is not supported if the Converter Standalone server is running on a Linux machine. It is available only for sources and destinations that allow volume-based cloning.

Prerequisites

Select a valid source and valid destination and go to the View/Edit Options page.

Procedure

1 On the View/Edit Options page, click **Data to copy** in the left pane.

2 From the **Data copy type** drop-down menu, select **Select volumes to copy** and click **Advanced**.

3 On the **Target Layout** tab, click **Add disk**.

   A new destination virtual disk is created.

4 (Optional) To delete a target disk, select it and click **Remove Disk**.

   NOTE You can only remove empty volumes.

You modified the number of target virtual disks.

What to do next

You can move source volumes to the newly created virtual disk.

Move a Source Volume to a Target Virtual Disk

Converter Standalone copies all source volumes to one target virtual disk. You can move source volumes to newly created target disks.

This option is not supported for Linux hosts. It is only available for sources and destinations that allow volume-based cloning.

You cannot move active or system volumes.

Prerequisites

Select a valid source and a valid destination and go to the View/Edit Options page.

Procedure

1 On the View/Edit Options page, click **Data to copy** in the left pane.

2 From the **Data copy type** drop-down menu, select **Select volumes to copy** and click **Advanced**.

3 (Optional) On the **Target Layout** tab, create a new target disk.

4 Select a volume to move and click **Move Up** or **Move Down** until it reaches the destination target disk.

The volumes you selected are saved to the corresponding destination virtual disks.

Modify the Settings in the Source Volumes List

When you perform volume-based cloning, you can modify the layout of source volumes on the destination datastore. In the source volumes list, you can select which volumes to copy to the destination virtual machine and control their size on the destination datastore.

Volume-based cloning depends on the operating system of the host machine. It is not supported for Linux hosts. It is also the only possible cloning type for physical machine sources.

Prerequisites

Select a valid source and destination to access the View/Edit Options page.

Procedure

1 On the View/Edit Options page, click **Data to copy** in the left pane.

2 From the **Data copy type** drop-down menu, choose **Select volumes to copy**.

3 In the source volumes list, select an option to specify the target size of the destination disks.

Option	Description
Maintain size	Maintains the original source disk size.
Minimum size	Copies only the used space of the source volume.
Type size	Allows you to type a custom size for the destination virtual disk. The value cannot be smaller than the used space on the source disk, but can be larger than its total size. The maximum allowed disk size is 999GB.

4 (Optional) To exclude any volume from the conversion, deselect the respective check box in the source volumes list.

5 (Optional) To view more details about source volumes, click **Advanced**.

The **Source Volumes** tab displays information about the used space, total size, and type of the original volume.

6 (Optional) Change the target datastore for a source virtual disk by using the drop-down menu.

This menu is available only for a managed destination with more than one datastore.

You selected the source volumes to copy to the destination and selected their size on the target datastore.

What to do next

You can create destination virtual disks to accommodate the source volumes or click **Next** to view a summary of the conversion task.

Change the Target Datastore for a Destination Virtual Disk

Converter Standalone allows you to save destination disks to different datastores.

This option is available only for managed destinations with more than one datastore.

Prerequisites

Select a managed destination and go to the View/Edit Options page.

Procedure

1 On the View/Edit Options page, click **Data to copy** in the left pane.

2 From the **Data copy type** drop-down menu, select **Select volumes to copy** and click **Advanced**.

3 On the **Target Layout** tab, use the drop-down menus to specify the **Target Datastore** for each virtual disk.

The target disks are copied to the selected datastore.

What to do next

Click **Next** to view a summary of the conversion task or select another option to set.

Create a Thin Provisioned Disk

Creating thin provisioned disks on managed destinations helps you use the hard disk space on your datastores more effectively. Thin provisioned disks contain only used space. As the target virtual machine adds data to the thin provisioned disks, their used space can expand to the original size of the source disk.

You can create thin provisioned disks only for managed destinations that support thin provisioning.

Procedure

1 Select a valid source and a VMware infrastructure destination.

2 On the View/Edit Options page, click **Data to copy** in the left pane and select the cloning mode.

Option	Description
Copy all disks and maintain layout	Performs disk-based cloning. Disk-based cloning transfers all sectors from all disks and preserves all volume metadata. The destination virtual machine receives the same volumes, of the same type as the volumes of the source virtual machine. Disk-based cloning supports all types of basic and dynamic disks.
Select volumes to copy	Performs volume-based cloning. In volume-based cloning, all volumes in the destination virtual machine are converted to basic volumes, regardless of their type in the corresponding source volume. Volume-based cloning at the file or block level is performed, depending on the volume size you select. Dynamic source disks are read but not preserved during volume-based conversions. Dynamic disks are converted into basic volumes on the target virtual machine.

3 Configure the target disk type.

Option	Action
Copy all disks and maintain layout	From the **Type** drop-down menu of the source disks list, select **Thin** for the target virtual disk.
Select volumes to copy	a Click **Advanced** to the right of the **Data to copy** drop-down menu. b Click the **Target Layout** tab. c In the **Type** drop-down menu, select **Thin** for each volume to convert as thin provisioned.

4 (Optional) If the destination contains more than one datastore, you can use the drop-down menus in the Target Datastore column to select a destination datastore for each target virtual disk.

5 Click **Next** to view a summary of the conversion task.

6 On the Ready to Complete page, click **Finish** to add the task to the task list.

Converter Standalone creates thin provisioned disks on the destination datastore. The initial size of the thin provisioned disks is equal to the used space on the source disks.

Create a Linked Clone

A linked clone is a VMware virtual machine that shares the virtual disk of the source virtual machine or system image. Linked clones are useful for quickly checking the compatibility of non-VMware images, such as `.sv2i` and `.vmc` files.

You can create linked clones only when you convert a virtual machine or other image source to a hosted destination.

Note Linked clones converted from Virtual PC and Virtual Server machines, and from LiveState images are corrupted if the source is modified or powered on after the conversion.

Prerequisites

Turn off the source virtual machine.

To verify that your source type is a supported third-party source, see "Supported Source Types," on page 21.

Procedure

1 Select **VMware Workstation or other VMware virtual machine** as a destination and click **Next**.

2 On the View/Edit Options page, click **Data to copy** in the left pane.

3 In the **Data copy type** drop-down menu, select **Linked clone**.

4 Select another option to set or click **Next** to view a summary of the conversion task and add it to the task list.

You created a linked-clone conversion task.

Change Device Settings on the New Virtual Machine

You can change the number of processors, the amount of memory, and the disk controller type to run on the destination virtual machine.

Procedure

1 On the View/Edit Options page, click **Devices** in the left pane.

   The device settings options appear to the right.

2 From the drop-down menu, select **Number of processors** to select the number of processors to run on the target virtual machine.

   The number of processors in the drop-down menu varies depending on the selected destination type.

3 From the drop-down menu, select **Disk controller type**.

   The list of available controllers that appears varies depending on the selected source and destination.

4 Use the slider to adjust the amount of memory allocated to the target virtual machine.

   For better accuracy, use the spin-box to the right.

5 Select another option to set or click **Next** to view a summary of the conversion task.

Converter Standalone creates a destination virtual machine based on your device settings.

Change Network Connections on the Destination

You can change the number of network adapters to appear on the destination virtual machine.

Procedure

1 On the **View/Edit Options** page, click **Networks** in the left options pane.

The network adapter options appear to the right.

2 Select the number of network adapters to connect from the drop-down menu.

3 Select the connection type for each network adapter from its respective drop-down menu.

The list of available networks varies depending on the selected destination. For hosted destinations, you can view more information about connection types in the bottom of the networks pane.

When you use managed destinations, the drop-down menu contains all networks that are found on the host.

4 Use the check boxes to enable or disable the connection of each network adapter when the destination virtual machine powers on.

5 Select another option to set or click **Next** to view a summary of the conversion task.

The network connections of your destination virtual machine are configured according to your settings.

NOTE This network setting also applies when you convert remote source machines running Linux and the target is being run as a helper virtual machine. Choose a network that allows the helper virtual machine to connect to the source and the Converter server to connect to the helper virtual machine.

Control the Status of Windows Services During Conversion

You can change the starting mode of the source Windows services on the target virtual machine and stop the Windows services on the source machine during the conversion. Stopping some services on the source machine allows easier synchronization between the source and the target machine.

Procedure

1 On the View/Edit Options page, click **Services** in the left options pane.

The following tabs appear in the right panel:

Source Services	Contains a list of all services on the source machine.
Destination Services	Contains a list of all destination services.

2 On the **Source Services** tab, select the services to stop during the conversion.

Stop the appropriate services, such as Exchange service or SQL service, to ensure the least possible data loss.

3 On the **Destination Services** tab, select the relevant services and change their starting mode from the respective drop-down menus.

4 Select another option to set or click **Next** to view a summary of the conversion task.

Converter Standalone shuts down the source services at the beginning of the conversion and configures the destination services to start according to your settings.

Advanced Customization Options

Before you start the conversion, you can use the View/Edit Options page in the Conversion wizard to adjust advanced settings. These settings include postconversion synchronization between source and destination, postconversion power state of the source and destination virtual machine, VMware tools installation, reconfiguration of destination virtual machine, destination computer information, and system restore checkpoints.

Some advanced options and settings might be unavailable depending on the source machine and destination type that you select.

NOTE VMware vCenter Converter Standalone does not support customization for Windows NT.

In the View/Edit Options page, you can complete the following customization tasks:

- Synchronize the source with the destination machine. Apply to the destination source updates that occur during cloning. This action delays source services shutdown and minimizes downtime.
- Control the power state of source and destination after conversion. When you create hot clones, you can power off the source machine and power on the destination machine as soon afterwards as possible. This action minimizes downtime.
- Install VMware Tools on the imported virtual machine to enhance the performance of the destination virtual machine. Installing VMware Tools is optional, but recommended.
- Edit the destination computer information. Creating an exact copy of a source machine causes conflicts if the source and the destination machine are running on the same network. Use this option to modify the identity (computer name, owner name, organization, and security ID) of the new virtual machine, its Windows license information, destination time zone, network adapter settings, and workgroup or domain page.
- Remove the system restore checkpoint on the destination machine to prevent the target machine from reverting to a preconversion state.
- Reconfigure the destination virtual machine to install the necessary device drivers so that it can boot without additional configuration.

Yellow exclamation marks indicate settings that need your attention. If you do not edit the remaining options, Converter Standalone applies the default source values.

Red cross marks indicate settings you must edit. Otherwise, you cannot navigate to the next page.

Synchronize the Source with the Destination Machine

You can synchronize source and destination machines after the conversion of a powered-on machine is complete.

When cloning is complete, services are shut down and the source and destination machines are synchronized. Synchronization is available only for MS Windows XP or later source operating systems, managed destinations, and unmanaged ESX hosts. Synchronization is not available for OVF destinations.

Procedure

1. On the View/Edit Options page, click **Advanced options**.
2. Select **Synchronize changes that occur to the source during cloning**.
3. (Optional) VMware recommends that you select **Power off source machine** as well and specify the services to stop on the source during conversion.
4. Select another option to set or click **Next** to view a summary of the conversion task.

Converter Standalone synchronizes the destination machine with the source machine after the conversion is complete.

Adjust the Post-Conversion Power State

Depending on the selected source machine and destination type, you can control the power state after the conversion.

Prerequisites

For all sources except virtual appliance sources, you can power off the source machine as soon as the conversion is complete, immediately after synchronization.

For virtual infrastructure destinations, you can power on the target machine immediately after the conversion. Doing so allows quicker introduction of the new virtual machine into your virtual environment.

Procedure

1 On the View/Edit Options page, click **Advanced options**.

The list of advanced settings appears to the right.

2 In the **Post-conversion power state** panel, select one or both of the power state control options:

Option	Description
Power on target machine	Appears for VMware Virtual Infrastructure destinations. Starts the newly created machine as soon as the conversion is finished.
Power off source machine	Appears for physical machines and virtual machine sources that are powered on during conversion setup. VMware recommends that you power off the source machine or stop the source services after you select **Synchronize changes that occur to the source during cloning**.

3 Select another option to set or click **Next** to view a summary of the conversion task.

After the conversion, Converter Standalone powers off the source machine and/or powers on the destination machine based on your settings.

Install VMware Tools

On the Advanced Customization page, you can install VMware Tools. VMware Tools enhance the performance of your destination virtual machine.

You can install VMware Tools to ESX, vCenter Server, Workstation 6.0 and 6.5, VMware Fusion 1.0 and 2.0, VMware Player 2.0 and 2.5, and ACE 2.0 and 2.5 destinations.

Procedure

1 On the View/Edit Options page, click **Advanced options**.

2 Select **Install VMware Tools on the imported virtual machine**.

3 Select another option to set or click **Next** to view a summary of the conversion task.

Converter Standalone installs VMware Tools on the target machine during conversion.

Customize the Guest Operating System

You can customize the operating system of the target virtual machine depending on the selected source and destination.

You can configure the guest preferences for sources running on Windows XP or later. You cannot customize the guest operating system of Linux source machines.

Prerequisites

You must set up the sysprep files before you can customize Windows Server 2003, Windows 2000, and Windows XP sources. You must save the sysprep files to `%ALLUSERSPROFILE%\Application Data\VMware \VMware vCenter Converter Standalone` on the machine where the Converter Standalone server runs. For more details on the sysprep location for different operating systems, see "Save Sysprep Files," on page 66.

Procedure

1 On the View/Edit Options page, click **Advanced options**.

2 In the Advanced conversion options pane, select **Configure guest preferences for the virtual machine** and click **Next**.

3 On the Customizations page, adjust the available customization options.

Option	Action
Computer Information	Enter computer name, owner name, and organization details for the destination virtual machine. If necessary, generate a new security ID.
Windows License	Enter the product ID or server license information for Windows operating systems.
Time Zone	Adjust the destination time zone.
Network Interface Settings	For each network adapter on the destination virtual machine, set up the IP address and the DNS server as well as DNS and WINS, if applicable.
Workgroup or Domain Page	Set up the network rights of the target virtual machine.

What to do next

Now you can click **Next** to view a summary of the conversion task.

Edit the Destination Computer Information

To identify the target virtual machine on the network, personalize it by editing its name, its owner and organization name, and by generating a new security ID.

Procedure

1 On the View/Edit Options page, click **Advanced options** and select **Configure guest preferences for the virtual machine**.

2 To access the guest operating system settings, click **Next**.

3 In the options list to the left, select **Computer Information**.

The information text boxes appear to the right.

4 Customize the following text boxes:

   a In the **Computer Name** text boxes, specify a computer name to identify the virtual machine on the network.

      Valid characters include A-Z, a-z, 0-9, and the hyphen (-). The underscore (_) is nonstandard, but Converter Standalone permits its use. The computer name cannot have more than 15 characters or consist only of numerals.

   b In the **Owner name** field, specify a unique name to identify the virtual machine on the network.

      Valid characters include A-Z, a-z, 0-9, and the hyphen (-). The underscore (_) is nonstandard, but Converter Standalone permits its use. The owner name cannot have more than 63 characters or consist only of numerals.

   c In the **Organization** field, enter an organization name.

      Valid characters include all printable characters. The limit is 63 characters.

5 (Optional) To create a new security identifier, select **Generate New Security ID (SID)**.

   By default, the security ID is selected for Windows Vista systems and Longhorn sources and you cannot deselect it.

6 Select another option to set or click **Next** to view a summary of the conversion task.

Enter the Windows License Information

VMware recommends entering licensing information for all destination virtual machines that are subject to licensing.

Some new virtual machines do not require a license.

Procedure

1 On the View/Edit Options page, click **Advanced conversion options** and select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Windows License**.

   The customization fields appear to the right.

4 Enter **Product ID** information for the destination virtual machine.

5 (Optional) Select **Include Server License Information** if the destination operating system is Microsoft Windows 2000 Server or Microsoft Windows 2003 Server.

6 Select a **Server License Mode** option.

Option	Description
Per seat	For individual user licenses.
Per server	For a concurrent user license. Specify the **Maximum Connections** number when you select this option.

7 Select another option to set or click **Next** to view a summary of the conversion task.

The Windows license information is saved to the destination virtual machine during the conversion.

Set the Time Zone

You can set the time zone if you are converting a virtual machine to use in a remote location.

Procedure

1 On the View/Edit Options page, click **Advanced options** and select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list, select **Time Zone**.

4 Select the target time zone from the **Time Zone** drop-down menu.

5 Select another option to set or click **Next** to view a summary of the conversion task.

The time zone is set on the destination virtual machine.

Set Up the Network Adapters

You can customize network adapter settings on the destination virtual machine.

The network adapters option is available for all supported destinations except virtual appliances.

Procedure

1 On the View/Edit Options page, click **Advanced conversion options** and select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Network Interface Settings**.

   The list of network adapters appears to the right.

4 Select the relevant adapter and click **Customize** to open its properties.

   a On the **General** tab, manually enter the IP address and DNS server address.

   b On the **DNS** tab, specify the DNS connections by entering DNS suffixes.

   c For each DNS suffix you enter, click **Add**.

   d If you are entering multiple DNS suffixes, use **Move Up** and **Move Down** to specify the order in which a virtual machine is to use the connections.

   e On the **WINS** tab, type the primary and secondary WINS IP address in the text box.

5 Select another option to set or click **Next** to view a summary of the conversion task.

Assign a Workgroup or Domain Details

You can set up how a target virtual machine participates in the destination network.

This option is available for all supported destinations except virtual appliances.

Procedure

1 On the View/Edit Options page, click **Advanced options** and select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Workgroup/Domain**.

   The workgroup and domain settings appear to the right.

4 Select how the virtual machine participates in a network.

Option	Description
Workgroup	Valid characters include A-Z, a-z, 0-9, space, and the hyphen (-). Maximum length is 15 characters.
Windows Server Domain	The text box must have a value. Valid characters include A–Z, a-z, 0-9, space, period , and hyphen (-). Each label delineated by a period can be 63 characters. The entire text string can be up to 254 characters. User credentials are required.

5 Select another option to set or click **Next** to view a summary of the conversion task.

Remove System Restore Checkpoints

For source machines running in Windows XP or later, VMware recommends that you remove all System Restore checkpoints, regardless of the cloning mode, unless you want the target virtual machine to be a replica of the source system.

System Restore is enabled on Windows Vista and Windows XP systems by default. For Windows Vista, if you are performing volume-based file-level cloning, System Restore checkpoints are automatically removed from the target virtual machine, regardless of whether the check box is selected or deselected. If you are performing disk-based cloning or volume-based block-level cloning, deselecting the check box instructs Converter to keep the System Restore check points in the target virtual machine.

Removing all System Restore checkpoints prevents the target machine from reverting to a preconversion state. Restoring a checkpoint in the target virtual machine that was created before you cloned the source machine can damage the system and cause the target virtual machine to become unbootable.

Procedure

1 On the View/Edit Options page, click **Advanced options**.

2 Select **Remove System Restore checkpoints on destination**.

3 Select another option to set or click **Next** to view a summary of the conversion task.

Converter Standalone does not copy the system restore checkpoints from the source to the destination virtual machine.

Set Up the Network for the Helper Virtual Machine

When converting physical machine sources that run Linux, Converter Standalone creates a Helper virtual machine on the destination host (ESX or vCenter Server). The Helper virtual machine needs network access to the source machine to clone the source files. Default conversion settings enforce automatic acquisition of IP address and DNS server for the Helper virtual machine. The following procedure allows you to setup this network connection manually.

Procedure

1 On the View/Edit Options page, click **Helper VM Network**.

The network settings pane opens to the right.

2 (Optional) To assign a static IP address to the Helper virtual machine, select **Use the following IP address** and specify the IP address, subnet mask, and default gateway.

Be sure that the IP address you specify for the Helper virtual machine is not already in use on the network.

3 (Optional) Select **Use the following DNS server address** and type the preferred DNS server address to configure the DNS server address manually.

   Optionally, type an alternative DNS server address.

4 Select another option to set or click **Next** to view a summary of the conversion task.

Converter Standalone uses the IP address and DNS server you specify to copy data from the source Linux machine to the destination virtual machine during conversion.

Customize a VMware Infrastructure Virtual Machine

When you convert to a VMware Infrastructure virtual machine, you can adjust some of its attributes. If you start the conversion process without changing any attributes, Converter Standalone applies the default conversion settings.

Procedure

1 On the Host/Resource page, click **Next** to go to the View/Edit Options page.

   All customization options are listed in the left pane.

2 Click **Destination Attributes** and select the destination folder for the new virtual machine.

3 (Optional) For OVF 1.0 sources with deployment properties and vCenter Server 4.0 destinations, click **Properties** to view or edit the property values.

   You cannot proceed if mandatory properties are missing property values.

   NOTE OVF property categories, if any, are not displayed.

4 Click **Data to copy** and select the data copy type from the drop-down menu.

Option	Description
Select volumes to copy	Performs volume-based copying.
Select disks to copy	Performs disk-based copying.

   The options that appear in the drop-down menu depend on the selected source.

5 Click **Devices** to choose the number of processors to appear on the new virtual machine, as well as the disk controller type, and amount of memory allocated to the particular machine.

6 Click **Networks** to change the number of network adapters to connect on the destination machine.

7 Use the drop-down menus to map networks from the virtual infrastructure to the network adapters.

8 Click **Services** to change the status of the source services and set up the starting mode of the destination services.

9 Click **Advanced conversion options** to customize the guest operating system, post-conversion power state, post-conversion synchronization, and VMware Tools installation.

10 Click **Next** to view a summary of the conversion task.

11 Click **Finish** to start the conversion.

You created a conversion task to produce a new virtual machine that ESX or vCenter Server runs.

Customize a Standalone or Workstation Virtual Machine

When you convert to a standalone virtual machine, you can adjust some of its attributes.

If you do not adjust the virtual machine attributes, Converter Standalone applies the default conversion settings. Some of the options might vary depending on the selected destination Desktop Virtualization product type.

Procedure

1 From the **Data to copy** drop-down menu, select the data copy type.

Option	Description
Select volumes to copy	Performs volume-based copying.
Select disks to copy	Performs disk-based copying.
Linked clone	Creates a virtual machine that shares the virtual disks of the source machine.

The options that appear in the drop-down menu depend on the selected source.

2 Depending on the selected copy type, adjust the disk types, sizes, and locations.

3 Click **Devices** to choose the number of processors to appear on the new virtual machine, the disk controller type, and the amount of memory allocated to this machine.

The number of processors and the disk controller type depend on the selected source and the destination product type.

4 Click **Networks** to change the number of network adapters to connect on the destination machine.

Use the drop-down menus to change the connection type. Select or deselect the check box next to each network connection to control its connection status when the destination machine powers on.

5 Click **Services** to change the status of the source services and to set up the starting mode of the destination services.

6 Click **Advanced conversion options** to customize the guest operating system, postconversion power state, postconversion synchronization, and VMware Tools installation.

7 Click **Next** to view a summary of the conversion task.

8 Click **Finish** to add the conversion task to the task list.

You created a conversion task to produce a new standalone virtual machine or VMware Workstation virtual machine.

Customize a Virtual Appliance

You can edit the target attributes when you convert a virtual machine source to a virtual appliance.

Prerequisites

You must complete the destination setup to access the target attributes.

Procedure

1 On the Destination page, click **Next** to go to the View/Edit Options page.

2 Click **Data to Copy** to view information about the target virtual disks.

3 Select **Create a Manifest File** to create a text file that contains a SHA1 digest of each of the files in the OVF package.

4 Click **Edit Product Information** to edit the product name, URL, version, vendor, and vendor URL to include in the destination OVF or OVA package.

The **Product Information** fields appear to the right.

5 (Optional) To add custom properties to the target OVF package, click **Product Properties** in the left pane.

6 Click **Annotation** to add any notes to be included in the target OVF or OVA package.

7 Click **Edit Networks** to create your own networks for the new virtual appliance.

   By default, Converter Standalone creates a network called VMNetwork.

8 Create a network and map it to a network adapter.

   a Click **Add**.

   b Enter the name and description in the Network properties window and click **OK**. Repeat for each network to add to the list.

   c From the **Network adapters to connect** drop-down menu, select a number.

   d (Optional) On the **Network adapters** list, use the drop-down menus to map the new network to the network adapters.

   e To remove a network from the list, select it and click **Remove**. If it is mapped to a network adapter, its network changes to the default network. The default network appears in the uppermost row of the networks list.

9 Click **Edit EULAs** to add end-user license agreements to the target virtual appliance.

   a Click **Add** and browse for the EULA files to include in the destination package. You can select multiple licenses.

   b Click the up or down arrows to change the order in which the licenses are listed.

   c Click **Remove** to remove a EULA file from the list.

10 Click **Next** to view a summary of the conversion task.

11 Click **Finish** to add the conversion task to the Converter Standalone task list.

You created a conversion task to produce a new virtual appliance.

Configure the Product Properties of an Exported Virtual Appliance

For virtual appliance destinations, you can add custom product properties to the target OVF package.

Property elements specify application-level customization parameters and are particularly relevant to appliances that must be customized with specific settings during deployment.

Prerequisites

All product properties are added to one product section. You cannot add or remove product sections in Converter Standalone.

Procedure

1 On the View/Edit Options page, click **Product Properties**.

   The properties list appears to the right. You can sort any column by clicking its header.

2 (Optional) To add a new product property, click **New**.

   The Property Settings dialog box appears.

   a Type a category and a label for the new property.

      By default, the label value is copied in the **ID** text box, but you can change it if necessary.

      NOTE The ID of the property must be unique and the **ID** text box cannot be empty.

   b (Optional) Type a string in the **Default value** text box.

      The **Type** text box is read-only. Converter Standalone supports only the `string` property type.

   c (Optional) Type a description of the new property in the corresponding text box.

d (Optional) To make the new property read-only to OVF users, deselect the **User configurable** check box.

e Click **OK** to add the new property to the custom properties list.

3 (Optional) To edit or delete a product property, select it in the list and click **Edit** or **Delete**.

You listed the custom product properties to add in the target virtual appliance.

What to do next

You can edit another option on the View/Edit Options page or click **Next** to view a summary of the conversion task.

View the Summary of a Conversion Task

On the Ready to Complete page, you can view a summary of the new conversion task before you add it to the task list.

The summary includes information about the source machine, the destination virtual machine, and destination customization settings, if any. Converter Standalone performs task validation at this stage.

Prerequisites

You must complete all task configuration steps to access the Ready to Complete page.

Procedure

1 Click **Next** on the View/Edit Options page to go to the Ready to Complete page.

2 (Optional) To change a task setting, click **Back** until you reach the relevant setup page.

3 Click **Finish** to add the conversion task to the task list.

Finish is active only when task validation is complete. This might take several minutes.

Your conversion task is added to the task list.

Configuring VMware Virtual Machines 5

You can use Converter Standalone to configure VMware virtual machines that have disks populated by restoration from a backup of a physical host or by some other direct means of copying a virtual machine's disks. Configuring such machines with Converter Standalone enables them to boot in VMware products.

NOTE You cannot configure OVF images.

Configure a Virtual Machine

You can configure files from a VMware standalone virtual machine, from an ESX server or vCenter Server virtual machine, or from a VMware Server virtual machine.

NOTE A physical machine cannot be a configuration source.

You configure a virtual machine in the VMware vCenter Converter Standalone application.

Procedure

1 Save Sysprep Files on page 66

   To customize the guest operating system of a virtual machine, you must save the Sysprep files to the specified locations on the machine where Converter Standalone server runs.

2 Select a Source to Configure on page 67

   You can select a VMware virtual machine as the source for a configuration task.

3 Select the Options to Configure on page 67

   Configuring the source machine helps to improve its performance, customize its operating system, and install the necessary device drivers.

4 Customize a Virtual Machine's Guest Operating System on page 68

   On the Configure Wizard Customization page, you can customize the identity of the configured virtual machine and generate a new security identifier.

5 View the Summary of a Configuration Task on page 72

   On the Ready to Complete page, you can view a summary of the new configuration task before you add it to the task list. Converter Standalone performs task validation at this stage.

Save Sysprep Files

To customize the guest operating system of a virtual machine, you must save the Sysprep files to the specified locations on the machine where Converter Standalone server runs.

Prerequisites

You must download the Sysprep files that correspond to the operating system of the source machine.

Procedure

1 Save the Sysprep files to the specified location.

Destination OS or Guest OS	Sysprep Files Location for Windows	Sysprep Files Location for Linux
Windows 2000	`%ALLUSERSPROFILE%\Application Data \VMware\VMware vCenter Converter Standalone\sysprep\2k`	`/var/lib/vmware-vcenter-converter-standalone/sysprep/2k`
Windows 2003 server (32 bit)	`%ALLUSERSPROFILE%\Application Data \VMware\VMware vCenter Converter Standalone\sysprep\svr2003`	`/var/lib/vmware-vcenter-converter-standalone/sysprep/svr2003`
Windows 2003 server (64 bit)	`%ALLUSERSPROFILE%\Application Data \VMware\VMware vCenter Converter Standalone\sysprep\svr2003-64`	`/var/lib/vmware-vcenter-converter-standalone/sysprep/svr2003-64`
Windows XP (32 bit)	`%ALLUSERSPROFILE%\Application Data \VMware\VMware vCenter Converter Standalone\sysprep\xp`	`/var/lib/vmware-vcenter-converter-standalone/sysprep/xp`
Windows XP (64 bit)	`%ALLUSERSPROFILE%\Application Data \VMware\VMware vCenter Converter Standalone\sysprep\xp-64`	`/var/lib/vmware-vcenter-converter-standalone/sysprep/xp-64`

2 Click **Convert Machine** or **Configure Machine** in the application toolbar to begin converting or configuring a machine.

What to do next

Now you can customize the guest operating system of a virtual machine by using the Conversion or the Configuration wizard.

Select a Source to Configure

You can select a VMware virtual machine as the source for a configuration task.

Procedure

1 On the Specify Source page, select a source type from the drop-down menu.

2 (Optional) Select **VMware Infrastructure virtual machine** as the configuration source if your source system is a virtual machine that runs on an ESX host or on an ESX host managed by vCenter Server.

   a In the Specify server connection information pane, type or select the ESX host that contains the virtual machine to be configured.

      The **Server** drop-down menu contains the identifiers or locations of systems that were logged in to previously. You can type a new identifier.

   b Enter your user credentials in the relevant text boxes and click **Next**.

      All virtual machines on the selected ESX host appear in the Inventory pane. You can filter virtual machines in the Inventory pane. You can narrow the list by selecting **VM List** from the drop-down menu and type a machine name to search for.

   c Select the machine to configure.

3 (Optional) If your source system is a standalone VMware virtual machine, from VMware Workstation, VMware Fusion, VMware Player, VMware Server, or VMware ACE, select **VMware Workstation or other VMware virtual machine** and browse for the source virtual machine or image.

   The file type choices are limited to VMware Workstation `*.vmx` files.

4 (Optional) Click **View Source Details** to view more information about the source virtual machine.

5 Click **Next**.

   If you selected a source virtual machine that is password protected, the Enter password pop-up window appears. Type your password and proceed to the customization page.

What to do next

On the View/Edit Options page, you can select the required configuration options.

Select the Options to Configure

Configuring the source machine helps to improve its performance, customize its operating system, and install the necessary device drivers.

Procedure

1 On the View/Edit Options page, select options to configure.

Option	Description
Install VMware Tools on the imported virtual machine	Enhances the performance of the configured virtual machine.
Configure guest preferences for the virtual machine	Allows you to configure the guest operating system.

Option	Description
Remove System Restore checkpoints on destination	Prevents the target machine from reverting to a preconversion state.
Reconfigure destination virtual machine	Installs the necessary device drivers, so that the destination virtual machine can boot without additional configuration.

2 (Optional) Select **Configure guest preferences for the virtual machine** and click **Next** to configure the guest operating system.

3 Click **Next** to view a summary of the configuration task.

4 Click **Finish** to add the configuration task to the task list.

Converter Standalone configures the source machine according to your settings.

Customize a Virtual Machine's Guest Operating System

On the Configure Wizard Customization page, you can customize the identity of the configured virtual machine and generate a new security identifier.

You can configure the guest preferences for sources running on Windows XP or later.

This procedure is applicable to ESX Server; vCenter Server; Workstation 5.0, 6.0, and 6.5; VMware Fusion 1.0 and 2.0; VMware Player 1.0, 2.0, and 2.5; VMware Server 1.0 and 2.0; and VMware ACE 1.0, 2.0, and 2.5 sources.

You can customize the following information:

- Computer information that identifies the virtual machine on a network
- Server license
- Virtual machine time zone
- Network interface properties
- Workgroup and Windows Server Domain

Prerequisites

You must set up the sysprep files before you can customize Windows 2003, Windows 2000, and Windows XP sources. You must save sysprep files to `%ALLUSERSPROFILE%\Application Data\VMware\VMware vCenter Converter Standalone` on the machine where the Converter Standalone server runs. For more details on the sysprep location for different operating systems, see "Save Sysprep Files," on page 66.

Procedure

1 On the View/Edit Options page, select **Configure guest preferences for the virtual machine** and click **Next**.

2 On the Customizations page, select **Computer Information** in the options pane and customize the computer and owner name, organization name, and the security ID.

3 (Optional) Select **Windows License** and enter the Windows licensing information for this virtual machine if necessary.

   You can leave the **Product ID** field blank and proceed to the next option.

   The **Include Server License Information** check box applies only to Microsoft Windows 2000 Server and Microsoft Windows 2003 Server operating systems. If you do not select this check box, the **Server License Mode** buttons are not active. This action does not apply to Windows Vista systems.

4 (Optional) Select **Time Zone** and select a time zone from the drop-down menu.

5 (Optional) Select **Network Interface Settings** to configure the network interfaces.

6 Click **Workgroup/Domain** to select how the virtual machine participates in a network.

7 Click **Next** to view a summary of the configuration task.

8 Click **Finish**.

The configuration task is added to the task list and will run according to the maximum concurrent task setting that you specified.

Edit the Computer Information of a Configured Virtual Machine

You can personalize the source virtual machine.

Prerequisites

To perform a configuration task, you must save the sysprep files to the corresponding location on the machine where Converter Standalone server runs.

Procedure

1 On the View/Edit Options page, select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Computer Information**.

   The information fields appear to the right.

4 Enter the **Computer Name**, the **Owner name**, and the **Organization** name.

   a In the **Computer Name** field, enter a computer name to identify the virtual machine on the network.

      Valid characters include A-Z, a-z, 0-9, and the hyphen (-). The underscore (_) is nonstandard, but Converter Standalone permits its use. The computer name cannot have more than 15 characters or consist only of numerals.

   b In the **Owner name** field, enter a unique name to identify the owner of the virtual machine on the network.

      Valid characters include A-Z, a-z, 0-9, and the hyphen (-). The underscore (_) is nonstandard, but Converter Standalone permits its use. The owner name cannot have more than 63 characters or consist only of numerals.

   c In the **Organization** field, enter an organization name.

      Valid characters include all printable characters. The limit is 63 characters.

5 (Optional) Select **Generate New Security ID (SID)** to create a new security identifier.

   By default, the security ID is selected for Windows Vista systems and Longhorn sources and you cannot deselect it.

6 Select another option to set or click **Next** to view a summary of the configuration task.

Enter the Windows License Information of a Configured Virtual Machine

VMware recommends that you enter licensing information for all virtual machines that are subject to licensing.

Prerequisites

To perform a configuration task, you must save the Sysprep files to the corresponding location on the machine where Converter Standalone server runs.

Procedure

1 On the View/Edit Options page, select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Windows License**.

The customization text boxes appear to the right.

4 Enter **Product ID** information for the destination virtual machine.

5 (Optional) Select **Include Server License Information** if the destination operating system is Microsoft Windows 2000 Server or Microsoft Windows 2003 Server.

6 Select a **Server License Mode** option.

Option	Description
Per seat	For individual user licenses.
Per server	For a concurrent user license. Specify the **Maximum Connections** number when you select this option.

7 Select another option to set or click **Next** to view a summary of the configuration task.

Set the Time Zone of a Configured Virtual Machine

You must set the time zone if you are configuring a virtual machine to use in a remote location.

Prerequisites

To perform a configuration task, you must save the Sysprep files to the corresponding location on the machine where Converter Standalone server runs.

Procedure

1 On the View/Edit Options page, select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list, select **Time Zone**.

4 Select the target time zone from the **Time Zone** drop-down menu.

5 Select another option to set or click **Next** to view a summary of the configuration task.

Set Up the Network Adapters of a Configured Virtual Machine

You can customize the network adapter settings of the source virtual machine to avoid duplicating IP addresses or other network conflicts.

The network adapters option is available for all sources that support system reconfiguration.

Prerequisites

To perform a configuration task, you must save the Sysprep files to the corresponding location on the machine where Converter Standalone server runs.

Procedure

1 On the View/Edit Options page, click **Advanced conversion options** and select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Network Interface Settings**.

   The list of network adapters appears to the right.

4 Select the adapter to customize and click **Customize** to open its properties.

   a On the **General** tab, enter the IP address and DNS server address.

   b On the **DNS** tab, specify the DNS connections by entering DNS suffixes.

   c (Optional) For each DNS suffix you enter, click **Add**.

   d (Optional) If you are entering multiple DNS suffixes, use **Move Up** and **Move Down** to specify the order in which a virtual machine is to use the connections.

   e On the **WINS** tab, type the primary and secondary WINS IP address in the text field.

   f Click **OK** to return to the Network Interface Setting page.

   Reset All is enabled if you modify one or more network adapters. Click this button to revert all settings for all adapters to the default.

What to do next

Now you can select another option to configure or click **Next** to view a summary of the configuration task.

Assign a Workgroup or Domain Details of a Configured Virtual Machine

You can set up the way a target virtual machine participates in the destination network.

This option is available for all supported destinations except virtual appliances.

Prerequisites

To perform a configuration task, you must save the sysprep files to the corresponding location on the machine where Converter Standalone server runs.

Procedure

1 On the View/Edit Options page, select **Configure guest preferences for the virtual machine**.

2 Click **Next** to access the guest operating system settings.

3 In the options list to the left, select **Workgroup/Domain**.

   The workgroup and domain settings appear to the right.

4 Select how the virtual machine participates in a network:

Option	Description
Workgroup	Valid characters include A-Z, a-z, 0-9, space, and the hyphen (-). Maximum length is 15 characters.
Windows Server Domain	The text box must have a value. Valid characters include A-Z, a-z, 0-9, space, period (dot), and hyphen (-). Each label delineated by a period can be 63 characters. The entire text string can be up to 254 characters. User credentials are required.

5 Select another option to set or click **Next** to view a summary of the configuration task.

View the Summary of a Configuration Task

On the Ready to Complete page, you can view a summary of the new configuration task before you add it to the task list. Converter Standalone performs task validation at this stage.

Prerequisites

You must complete all task configuration steps to access the Ready to Complete page.

Procedure

1 Click **Next** on the View/Edit Options page to go to the Ready to Complete page.

   If you select to configure the guest preferences for the virtual machine, complete the Customization page and click **Next** to access the Ready to Complete page.

   The task Summary appears. You can view information about the source machine, the destination virtual machine, and destination customization settings, if any.

2 (Optional) To change a task setting, click **Back** until you reach the relevant setup page (View/Edit Options or Specify Source).

3 Click **Finish** to add the configuration task to the task list.

   Finish is active only when task validation is complete. This might take several minutes.

Managing Conversion and Configuration Tasks 6

Converter Standalone provides a task manager for managing migrations and configurations for a single conversion.

After you create a task using the Converter Standalone wizards to set up how to convert or configure a machine, you can use the Task View of Converter Standalone manager to manage running tasks, to edit the tasks, to look at the progress of a task, and more.

Manage Tasks in the Task List

Converter Standalone provides a list of all tasks that are submitted. You can use the main application menus to control the way tasks appear in the task list.

Prerequisites

You must submit a conversion or configuration task to view it in the task list.

- Add a Task to the Task List on page 74

  VMware vCenter Converter Standalone runs conversion tasks and configuration tasks as they appear in the task list, depending on the maximum number of tasks that is set in **Administration menu > Maximum concurrent tasks**.

- Control the Number of Tasks Running Concurrently on page 74

  You can set the number of tasks that can run concurrently to improve the conversion speed. Limiting the number of concurrent tasks helps you reduce the network resources required for the conversion tasks. Limiting the number of concurrent tasks also helps to limit the CPU load on the machine where the Converter Standalone server runs.

- Modify, Cancel, or Delete Tasks on page 74

  In the Converter Standalone task list, you can edit, cancel, and delete tasks.

- Check the Task Progress and Log Files on page 75

  The Task list and the Task Details pane show the progress of tasks.

- Filter the Tasks in the Task List on page 77

  The number of archived tasks can grow to be very large. To minimize clutter in the task list, you can lower the number of tasks that appear. You can choose which tasks to appear in the task list by filtering them.

Add a Task to the Task List

VMware vCenter Converter Standalone runs conversion tasks and configuration tasks as they appear in the task list, depending on the maximum number of tasks that is set in **Administration menu > Maximum concurrent tasks**.

Prerequisites

You must complete the Conversion wizard or the Configuration wizard.

Procedure

1 View the task Summary, make sure no settings need adjustment, and click **Finish** to add a conversion or configuration task.

2 Click **Yes** to add the task to the task list.

The task appears at the beginning of the task list.

What to do next

In the task list, you can view the progress, expected end time, and other details of the task. You can also stop running tasks and copy running, failed, or complete tasks to create tasks.

Control the Number of Tasks Running Concurrently

You can set the number of tasks that can run concurrently to improve the conversion speed. Limiting the number of concurrent tasks helps you reduce the network resources required for the conversion tasks. Limiting the number of concurrent tasks also helps to limit the CPU load on the machine where the Converter Standalone server runs.

You can set the number of concurrent tasks to any number from 1 to 12. The default number of concurrent tasks is set to Maximum.

Procedure

1 On the main menu, select **Administration > Maximum Concurrent Tasks**.

2 In the **Custom** spin-box, select or type a number.

3 Click **OK**.

The setting takes effect immediately for all newly added tasks. See Example 6-1.

Example 6-1. Limiting the Number of Concurrent Tasks

Assume that Converter Standalone is running 12 tasks. If you change the number of concurrent tasks to 6, these 12 tasks continue running, but all newly added tasks remain pending in the task list.

When the number of running tasks drops to 5, a new task from the wait list starts.

Modify, Cancel, or Delete Tasks

In the Converter Standalone task list, you can edit, cancel, and delete tasks.

While tasks are running, you can continue to add new tasks to the queue by using the Conversion or the Configuration wizards. In the tasks list, you can cancel, delete, and edit canceled or failed tasks.

- Create a Task by Copying an Existing Task on page 75

  You can edit a task in the task list by creating a copy of the task and modifying its settings in the Conversion wizard. The original task settings appear at each step of the wizard, so that you can reuse or change them.

- Cancel a Task on page 75

  You can cancel a task in the queue or a task that is in progress.

- Delete a Task on page 75

  The **Delete** option removes a task from the task list.

Create a Task by Copying an Existing Task

You can edit a task in the task list by creating a copy of the task and modifying its settings in the Conversion wizard. The original task settings appear at each step of the wizard, so that you can reuse or change them.

Procedure

1 Select a task in the task list.

2 Select **Task > Copy As New**.

3 Follow the prompts to modify the original task settings.

4 Click **Finish** to add the new task to the task list.

Cancel a Task

You can cancel a task in the queue or a task that is in progress.

When you cancel a task, the task loses its place in the queue. To complete a canceled task, you must resubmit it to the task list. Canceling a task in progress does not suspend it. Canceling a task removes it from the conversion and reverts the source machine to its original state. You cannot restart a canceled task, but you can create a copy of the canceled task and add it to the task list to run it again.

Procedure

1 From the task list of the Task view, select a task.

2 Click **Cancel**.

  The task is now out of the queue, the **Start Time** in the task list appears as three hyphens (---), and the time of cancellation appears in the End Time column.

3 (Optional) Right-click the canceled task and select **Copy As New**.

  The Conversion wizard opens. Complete the wizard to add the conversion task to the task list.

Delete a Task

The **Delete** option removes a task from the task list.

The **Delete** option works on any task except for a task in progress.

Prerequisites

To delete a running task, cancel it and perform the following procedure.

Procedure

1 From the task list of the Task view, choose a task to remove.

2 Click **Delete**.

The task is removed from the task list.

Check the Task Progress and Log Files

The Task list and the Task Details pane show the progress of tasks.

If problems arise that cause the task to fail, you can also review information in the log files.

- View Task Progress on page 76

  The Task view and the Details view show the progress of tasks. You can check the estimated time left to the completion of a conversion task in the End Time column.

- Export the Log Files for a Task on page 76

  If problems arise that cause a task to fail, you can review information about the task in the log files or send a copy of log files to VMware technical support. You can export the log files for a specific task in the task list.

- Export All Log Files on page 77

  You can export the log files of all tasks that are present in the current server log files.

- UFAD and Client Log Files Locations on page 77

  Converter Standalone saves log files as it operates.

View Task Progress

The Task view and the Details view show the progress of tasks. You can check the estimated time left to the completion of a conversion task in the End Time column.

You can obtain a general sense of a task's progress by looking at its row in the task list of the Task view. View the **Task Progress** tab in the Details view for more complete information.

Procedure

1 Select the row in the task list for the task to view.

  The information for that task appears in the Details pane below the tasks list.

2 Click the **Task Progress** tab to view the conversion status and log highlights.

Export the Log Files for a Task

If problems arise that cause a task to fail, you can review information about the task in the log files or send a copy of log files to VMware technical support. You can export the log files for a specific task in the task list.

Procedure

1 Select the task in the task list.

2 In the Details pane, click the **Task Progress** tab.

3 Click **Export Logs**.

4 Select a location to which to save the files and click **Save**.

The log files for this task are saved to the selected location.

Note Windows Explorer does not allow you to view the logs if you are logged in with restricted (nonadministrator) user credentials. To avoid this situation, save the log files in a public folder rather than in a home directory.

Export All Log Files

You can export the log files of all tasks that are present in the current server log files.

Procedure

1 Select **File > Export Logs**.

2 Select a location to which to save the files and click **Save**.

All current server log files are saved to the selected directory.

3 Open the log files with a text editor.

UFAD and Client Log Files Locations

Converter Standalone saves log files as it operates.

Table 6-1 lists the default locations where log files are saved. You can view the log files or send them to VMware support, if necessary.

These file locations are also the file locations on the remote machine if you are running a remote hot clone. To send these log files from a remote machine to VMware support, you must manually compress and send them.

Table 6-1. Log Files Locations

Log Files	System	File Path
UFAD server and agent log files	Windows	`%ALLUSERSPROFILE%\Application Data\VMware\VMware vCenter Converter Standalone\logs*`
UFAD server and agent log files	Linux	`/var/log/vmware-vcenter-converter-standalone/`
Converter Standalone client log files	Windows	`%USERPROFILE%\Local Settings \Application Data\VMware\VMware vCenter Converter Standalone \Logs*`
Converter Standalone client log files	Linux	`$HOME/.vmware/VMware vCenter Converter Standalone/Logs/`

Filter the Tasks in the Task List

The number of archived tasks can grow to be very large. To minimize clutter in the task list, you can lower the number of tasks that appear. You can choose which tasks to appear in the task list by filtering them.

You can filter tasks by history, status, or multiple criteria.

- Filter Tasks by History on page 77

  You can use the date on which a task is submitted to filter the task list.

- Filter Tasks by Status on page 78

  You can change which tasks appear in the task list based on their running status.

- Filter Tasks by Multiple Criteria on page 78

  You can combine filtering criteria to filter tasks in the task list. Currently running tasks are displayed regardless of the filtering criteria you apply.

Filter Tasks by History

You can use the date on which a task is submitted to filter the task list.

This option does not affect tasks in progress. Tasks in progress always appear in the task list.

Procedure

1 On the main menu, select **View > History Filter**.

2 Select a level of display from the drop-down menu.

Only tasks that correspond to the selected display level remain in the task list.

Filter Tasks by Status

You can change which tasks appear in the task list based on their running status.

Procedure

1 On the main menu, select **View > Filter by**.

2 Select a level of display from the drop-down menu.

   If you are connected to a remote Converter Standalone server, you can select **My own** to view only tasks that you create.

Filter Tasks by Multiple Criteria

You can combine filtering criteria to filter tasks in the task list. Currently running tasks are displayed regardless of the filtering criteria you apply.

Procedure

◆ Use the drop-down menus in the toolbar to select the status and history criteria.

   The two filtering conditions combine to show only tasks that comply with both conditions.

   If you select **Failed** and **Past week** filters, the resulting task list contains their combined output:

   - All tasks with failed status that were active within the last 24 hours
   - All tasks with failed status that were completed in the past 7 days

Glossary

BIOS (basic input/output system)
Firmware that controls machine startup and manages communication between the CPU and other devices, such as the keyboard, monitor, printers, and disk drives.

bridged networking
In hosted products, a type of network connection between a virtual machine and the host's physical network. With bridged networking, a virtual machine appears to be an additional computer on the same physical Ethernet network as the host. See also custom networking, host-only networking, NAT (network address translation).

child
A managed entity grouped by a folder object or another managed entity. See also folder.

clone
(n.) A duplicate of a virtual machine. (v.) To make a copy of a virtual machine. Hosted products distinguish between full clones and linked clones. See also full clone, linked clone.

cluster
A server group in the virtual environment. Clusters enable a high-availability solution.

cluster compute resource
An extended compute resource that represents a cluster of hosts available for backing virtual machines. See also compute resource.

cold cloning
In VMware vCenter Converter Standalone, cloning a local physical machine while it is running in WinPE from the vCenter Converter Boot CD, not from its own operating system. See also hot cloning.

compute resource
A managed object that represents either a single host or a cluster of hosts available for backing virtual machines. See also cluster compute resource.

concurrent migrations
In VMware vCenter Converter Standalone, the Task Manager's ability to direct the conversion and migration of multiple virtual machines at the same time.

configuration
See virtual machine configuration.

current virtual machine
(1) A virtual machine of the latest version supported by the product in use. See also legacy virtual machine. (2) In hosted products, the virtual machine that has focus in the service console.

custom networking
In hosted products, any type of network connection between virtual machines and the host that does not use the default bridged, host-only, or network address translation (NAT) configurations. For example, virtual machines can be connected to the host by separate networks or connected to each other and not to the host. See also bridged networking, vCenter Converter Boot CD (VMware vCenter Converter Boot CD), host-only networking, NAT (network address translation).

customization
The process of applying new characteristic values to a virtual machine as it is being deployed from a template or cloned from another existing virtual machine. Customization options include changing the new virtual machine identification and network information.

datacenter
A required structure under which hosts and their associated virtual machines are added to the vCenter Server. vCenter Server supports multiple datacenters. A host can be managed under only one datacenter.

datacenter folder
An optional inventory grouping structure contained within the datacenter structure. A vCenter Server supports multiple datacenter folders. Datacenter folders can contain only datacenters and other datacenter folders.

data source name
An ODBC (Open DataBase Connectivity) object that you must configure to enable vCenter Server to access a database.

datastore
Virtual representations of combinations of underlying physical storage resources in the datacenter. A datastore is the storage location (for example, a physical disk, a RAID, or a SAN) for virtual machine files.

destination virtual machine
In VMware vCenter Converter, the migrated virtual machine at its final location.

disabled
A state in which actions and features are deactivated. The feature is turned off by a choice the user makes.

DNS (Domain Name System)
An Internet data query service that translates host names into IP addresses. Also called Domain Name Server or Domain Name Service.

enable
A state in which actions and features are active. The feature is turned on by a choice the user makes.

Ethernet switch
A physical switch that manages network traffic between machines. A switch has multiple ports, each of which can be connected to a machine or to another switch on the network. See also virtual switch.

EULA (end user license agreement)
The software license that details any restrictions placed on users.

FAT (file allocation table)
See file allocation table (FAT).

fault
A data object containing information about an exception condition encountered by an operation.

file
A container for raw data, such as text or an image.

file allocation table (FAT)
An area on a disk that stores information about the location of each piece of every file on the disk and about the location of unusable areas of the disk.

folder
A managed entity used to group other managed entities. Folder types are determined by the types of child entities they contain. See also child.

full clone
A complete copy of the original virtual machine, including all associated virtual disks. See also linked clone.

GOS (guest operating system)
See guest operating system.

growable disk
A type of virtual disk in which the disk space is not preallocated to its full size. The disk files begin small and grow as data is written to the disk. See also preallocated disk.

guest operating system
An operating system that runs inside a virtual machine. See also host operating system.

guest user
An unauthenticated user who can log in to a system with a temporary user name and password. A guest user has restricted access to files and folders and has a set of restricted permissions

host
A computer that uses virtualization software to run virtual machines. Also called the host machine or host computer. The physical computer on which the virtualization (or other) software is installed.

host agent
Software that performs actions on behalf of a remote client when installed on a virtual machine host.

host computer
The physical computer on which VMware vCenter Converter Standalone software is installed.

hosted machine
The physical computer on which the VMware Workstation software is installed. The hosted machine hosts the VMware Workstation virtual machines.

hosted products
VMware products (including Workstation, VMware Player, VMware Server, VMware ACE, and Lab Manager) that run as applications on physical machines with operating systems such as Microsoft Windows or Linux. See also hypervisor.

host-only networking
In hosted products, a type of network connection between a virtual machine and the host. With host-only networking, a virtual machine is connected to the host on a private network, which normally is not visible outside the host. Multiple virtual machines configured with host-only networking on the same host are on the same network. See also bridged networking, vCenter Converter Boot CD (VMware vCenter Converter Boot CD), custom networking, NAT (network address translation).

host operating system
An operating system that runs on the host machine. See also guest operating system.

hot cloning
In VMware vCenter Converter Standalone, cloning a local or remote physical machine while it is running in its own operating system. See also cold cloning.

hot fix
An installable file that resets a user's password, renews an expired virtual machine, or enables a copy-protected virtual machine to run from a new location.

hypervisor
A platform that allows multiple operating systems to run on a host computer at the same time.

IDE

(1) Acronym for integrated drive electronics, a standard electronic interface used to connect mass storage devices to a computer. The ANSI name for IDE is Advanced Technology Attachment (ATA). See also SATA (serial advanced technology attachment). (2) Acronym for integrated development environment.

independent disk

A type of virtual disk that is not affected by snapshots. You can configure independent disks in persistent and nonpersistent modes.

inventory

A hierarchical structure used by the vCenter Server or the host agent to organize managed entities. This hierarchy is a list of all the monitored objects in vCenter Server.

LAN segment

A private virtual network that is available only to virtual machines within the same team. See also team, virtual network.

legacy virtual machine

A virtual machine supported by the product in use but not current for that product. For example, in Workstation 5, you can use and create virtual machines for use in Workstation 4.x, GSX Server 3.x, or ESX Server 2.x. New Workstation 5 features (such as clones, multiple snapshots, and teams) are not compatible with the legacy virtual machines.

linked clone

A copy of the original virtual machine. The copy must have access to the parent virtual machine's virtual disks. The linked clone stores changes to the virtual disks in a separate set of files. See also full clone.

local cloning

The process of making a copy of a virtual machine residing in the system on which VMware vCenter Converter is running, or making a copy of the physical machine itself for conversion to a virtual machine. See also remote cloning.

LUN (logical unit number)

An identifier for a disk volume in a storage array.

migration

The process of moving a virtual machine between hosts. Unless VMotion is used, the virtual machine must be powered off when you migrate it. See also migration with VMotion, migration with VMware vCenter Converter Standalone.

migration with VMotion

The process of moving a virtual machine that is powered on and meets selected requirements, including the activation of VMotion on both the source and target hosts. When you migrate a virtual machine using VMotion, the operations of the virtual machine can continue without interruption. See also migration with VMware vCenter Converter Standalone.

migration with VMware vCenter Converter Standalone

The process of moving a powered off virtual machine from a local or remote host, while reconfiguring the file format, if necessary, to accommodate the destination machine. See also migration with VMotion.

NAT (network address translation)

In hosted networking, a type of network connection that enables you to connect your virtual machines to an external network when you have only one IP network address and the host computer uses that address. The VMware NAT device passes network data between one or more virtual machines and the external network. It identifies incoming data packets intended for each virtual machine and sends them to the correct destination. See also bridged networking, vCenter Converter Boot CD (VMware vCenter Converter Boot CD), custom networking, host-only networking.

NIC (network interface card)

An expansion board that provides a dedicated connection between a computer and a network. Also called a network adapter.

NTFS file system
The correct, redundant use of new technology file system.

open virtual appliance (OVA)
A packaging format for virtual machines that allows virtual machine templates to be distributed, customized, and instantiated on any OVA supporting VMM.

Open Virtualization Format (OVF)
A distribution format for virtual appliances that uses existing packaging tools to combine one or more virtual machines with a standards-based XML wrapper. OVF gives the virtualization platform a portable package containing all required installation and configuration parameters for virtual machines. This format allows any virtualization platform that implements the standard to correctly install and run virtual machines.

package
An installable bundle for distribution to end users. The package might include one or more virtual machines and an application used to run virtual machines.

page file
A component of an operating system that provides virtual memory for the system. Recently used pages of memory are swapped out to this area on the disk to make room in physical memory (RAM) for newer memory pages. Also called a "swap file." See also virtual memory.

parent
(1) The source virtual machine from which you take a snapshot or make a clone. If you delete the parent virtual machine, any snapshot becomes permanently disabled. (2) In a VMware Infrastructure inventory, the managed entity that immediately encloses a given entity (considered the child entity). See also full clone, linked clone, snapshot, template.

physical CPU
A single physical CPU in a physical machine.

physical disk
In hosted products, a hard disk in a virtual machine that is mapped to a physical disk drive or partition on the host machine. A virtual machine's disk can be stored as a file on the host file system or on a local hard disk. When a virtual machine is configured to use a physical disk, vCenter Server directly accesses the local disk or partition as a raw device (not as a file on a file system). See also virtual disk.

physical network
A network of physical machines (plus cabling, switches, routers, and so on) that are connected so that they can send data to and receive data from each other. See also virtual network.

preallocated disk
A type of virtual disk in which all disk space for the virtual machine is allocated at the time the disk is created. This disk is the default type of virtual disk created by GSX Server.

privilege
Authorization to perform a specific action or set of actions on a managed object or group of managed objects.

provisioning
The process of creating a functioning virtual machine by assigning resources such as CPU, memory, and virtual hardware and then deploying a system image.

raw disk
See physical disk.

remote cloning
Making a copy of a virtual machine or a physical machine accessed over the network by VMware vCenter Converter. See also local cloning.

resource pool
A division of computing resources used to manage allocations between virtual machines.

resume
To return a virtual machine to operation from its suspended state. When you resume a suspended virtual machine, all applications are in the same state as when the virtual machine was suspended. See also suspend.

root user
The superuser who has full administrative privileges to log in to an ESX Server host. The root user can manipulate permissions, create users and groups, and work with events.

SAN (storage area network)
A large-capacity network of storage devices that can be shared among multiple VMware ESX server hosts. A SAN is required for VMotion.

SATA (serial advanced technology attachment)
A standard, based on serial signaling technology, for connecting computers and hard drives. Also called Serial ATA.

scheduled task
A vCenter Server activity that is configured to occur at designated times. In VMware Converter, scheduled tasks consist of migrations and configurations of virtual machines.

SCP (Secure Copy Protocol)
A secure version of the UNIX remote copy (`rcp`) command. SCP transfers computer files between a local and a remote host or between two remote hosts, using SSH to provide authentication. See also SSH (Secure Shell).

SDK (software development kit)
A set of tools for programmers who are developing software for a particular platform. A VMware SDK might include an API, an IDL, client stubs, sample code, and documentation.

server
(1) A system capable of managing and running virtual machines. (2) A process capable of accepting and executing instructions from another process.

snapshot
A reproduction of the virtual machine just as it was when you took the snapshot, including the state of the data on all the virtual machine's disks and the virtual machine's power state (on, off, or suspended). You can take a snapshot when a virtual machine is powered on, powered off, or suspended. See also independent disk.

source
In VMware vCenter Converter, the machine from which you import or create a virtual machine.

source virtual machine
In VMware vCenter Converter, the virtual machine to be imported, at its original location.

SSH (Secure Shell)
A program for securely logging on to a remote machine and executing commands. SSH provides encrypted communications between two untrusted hosts over a network. SSH can use several forms of encryption and has been ported to multiple platforms, including Linux, Microsoft Windows, and Macintosh.

standalone ACE instance
An ACE instance that is not managed by an ACE Management Server. Any changes to the instance's policies or other settings are made by the administrator's distribution of updates to the user.

standalone virtual machine
A virtual machine that runs in VMware Workstation, VMware Server, and VMware Player. See also source virtual machine.

suspend
A state in which settings are preserved and actions are no longer performed. To turn off a virtual machine while preserving the current state of a running virtual machine. See also resume.

swap file
See page file.

task
A managed object representing the state of a long-running operation.

TCP (Transmission Control Protocol)
A reliable transfer protocol used between two endpoints on a network. TCP is built on top of the Internet Protocol (IP). See also TCP/IP (Transmission Control Protocol/Internet Protocol).

TCP/IP (Transmission Control Protocol/Internet Protocol)
The set of protocols that is the language of the Internet, designed to enable communication between networks regardless of the computing technologies that they use. TCP connects hosts and provides a reliable exchange of data streams with guaranteed delivery. IP specifies the format of packets and handles addressing. See also UDP (User Datagram Protocol).

team
A group of virtual machines configured to operate as one object. You can power on, power off, and suspend a team with one command. You can configure a team to communicate independently of any other virtual or real network by setting up a LAN segment. See also LAN segment, virtual network.

template
A master image of a virtual machine. The template typically includes a specified operating system and a configuration that provides virtual counterparts to hardware components. Optionally, a template can include an installed guest operating system and a set of applications. Templates are used by vcenter to create new virtual machines. See also linked clone, parent, snapshot.

UDP (User Datagram Protocol)
One of the core protocols in the Internet protocol suite. UDP enables a program to send packets (datagrams) to other programs on remote machines. UDP does not require a connection and does not guarantee reliable communication. It is a quick and efficient method for broadcasting messages over a network. See also TCP/IP (Transmission Control Protocol/Internet Protocol).

vCenter Converter Boot CD (VMware vCenter Converter Boot CD)
The means by which a user can perform a local cold clone of a physical machine. When the physical machine is booted from the vCenter Converter Boot CD, the Converter application runs on WinPE. It uses a RAM disk for its operations and leaves no footprint on the physical machine.

virtual disk
A file or set of files that appears as a physical disk drive to a guest operating system. These files can be on the host machine or on a remote file system. See also growable disk, physical disk, preallocated disk.

virtual hardware
The devices that make up a virtual machine. The virtual hardware includes the virtual disk, removable devices such as the DVD-ROM/CD-ROM and floppy drives, and the virtual Ethernet adapter. See also virtual machine settings editor.

virtual machine
A virtual machine is a software computer that, like a physical computer, runs an operating system and applications. Multiple virtual machines can operate on the same host system concurrently. See the guidelines for using the acronym VM in place of virtual machine.

virtual machine administrator
A role in which the user can perform all the virtual machine management functions.

virtual machine configuration

The specification of which virtual devices, such as disks and memory, are present in a virtual machine and how they are mapped to host files and devices. In vConverter, VMware virtual machines whose disks have been populated by restoring from a backup or by some other direct means of copying undergo configuration to enable them to boot in VMware products. See also virtual machine.

virtual machine settings editor

A point-and-click control panel used to view and modify the settings of a virtual machine setting.

virtual memory

An extension of a system's physical memory, enabled by the declaration of a page file. See also page file.

virtual network

A network connecting virtual machines that does not depend on physical hardware connections. For example, you can create a virtual network between a virtual machine and a host that has no external network connections. You can also create a LAN segment for communication between virtual machines on a team. See also LAN segment, team.

virtual switch

A virtualized network switch used by ESX server to manage traffic between virtual machines, the service console, and the physical network adapters on the ESX server machine.

VM (acronym for virtual machine)

Restricted use. A virtual machine is a software computer that, like a physical computer, runs an operating system and applications. A virtual machine is also referred to as a VM. Use the acronym VM when the screen or controls do not have sufficient space to use the complete term virtual machine.

Index

A

Acronis True Image, source **21, 40**
adding tasks **74**
advanced customization
  guest operating system **56**
  installing VMware Tools **56**
  overview **55**
  powering machines on and off **56**
  removing system restore checkpoints **60**
  synchronizing source and destination **55**

C

changing the number of tasks displayed **77, 78**
cloning
  cloning modes **46**
  defined **10**
  disk cloning modes **16**
  disk-based cloning **17, 48**
  full clones **17**
  hot cloning **13**
  linked clones **17, 53**
  local cloning, defined **13**
  remote cloning, defined **13**
  volume-based cloning **16, 49**
cold cloning, boot CD **12**
command-line commands **31**
configuring
  guest operating system **68**
  moving volumes to target virtual disk **50**
  new target disks **50**
  options **67**
  overview **65**
  selecting a source **67**
  selecting the options **67**
  selecting VMware Fusion source **67**
  selecting VMware Player source **67**
  selecting VMware Server source **67**
  selecting Workstation source **67**
  starting the Wizard **65**
  Sysprep files locations **66**
  target datastore **51**
  view summary **64, 72**
  viewing task summary **64, 72**
connect to a remote Converter Standalone server **35**
controlling the number of concurrent tasks **74**
conversion, starting **38**
conversion limitations
  Linux guest limitations **22**
  powered-on machine limitations **22**
  reconfiguration limitations **22**
  third-party images limitations **22**
  third-party virtual machines or system images **23**
  virtual appliances **23**
  virtual machines **22**
  windows guest limitations **22**
conversion options for a standalone virtual machine **39**
conversion tasks
  editing **75**
  managing **73**
  maximum running **74**
conversion wizard, starting **38**
conversion, selecting a procedure **37**
Converter Standalone
  components **10**
  Converter Standalone agent **10**
  Converter Standalone client **10**
  Converter Standalone server **10**
  Introduction **9**
Converter Standalone agent **10**
Converter Standalone client **10**
Converter Standalone server **10**
converting, powered-on machines **55**
copy source machine changes to destination **13**
creating thin provisioned disks **52**
customization
  cloning modes **46**
  data copy types **46**
customizing
  advanced options **55**
  datastore folder **46**
  destination attributes **46**
  disk controllers **53**
  disk-based cloning **48**
  memory **53**
  network adapters **54**
  network connections **54**
  number of networks **54**

overview **45**
OVF product properties **63**
processors **53**
standalone destinations **61**
virtual appliance destinations **62**
VMware Infrastructure destinations **61**
volume-based cloning **49**
Windows services **54**
Workstation destinations **61**

D

deleting tasks **75**
destination
ESX host **23, 42**
vCenter Server **23, 42**
virtual appliances **23, 44**
VirtualCenter **23, 42**
VMware ACE **23, 44**
VMware Fusion **23, 44**
VMware Player **23, 44**
VMware Server **23, 44**
Workstation **23, 44**
disk cloning modes
disk-based cloning, defined **17**
full clones, defined **17**
linked clones, defined **17**
volume-based cloning, defined **16**
disk-based cloning **17, 48**
disks, thin provisioning **52**
duplicate ID **25**

E

editing tasks **74**
errors, viewing in the log files **76, 77**
ESX host
destination **23, 42**
source **21, 39**
support **21**
exporting a single task log file **76**
exporting all log files **77**
exporting virtual machines **44**

F

full clones, defined **17**

G

guest operating system customization
computer information **57, 69**
DNS **59, 70**
network adapters **59, 70**
network configuration **70**
SID **57, 69**
time zone **59, 70**
Windows license **58, 69**
WINS **59, 70**
workgroup and domain page **59, 71**
GUID Partition Table (GPT) disks **16**

H

Helper VM **60**
hot and cold cloning compared **11**
hot cloning
Linux sources **14**
power off source **56**
power on target **56**
synchronizing source with destination **55**
Windows sources **13**
Hyper-V, source **21**

I

installation space requirements **20**
installing VMware vCenter Converter Standalone
in Linux **32, 33**
in Windows **29**
Windows command-line installation **31**
Introduction **9**

L

linked clones, defined **17**
live cloning, *See* hot cloning
local cloning, defined **13**
log files, exporting and viewing **76, 77**
logs, location **77**

M

managing tasks
adding to task list **74**
canceling **74, 75**
changing the number of tasks displayed **77, 78**
checking task progress **75**
deleting **75**
filtering tasks by history **77**
filtering tasks by status **78**
multiple-criteria filtering **78**
task view **73**
managing tasks with the Task View **18**
Master Boot Record (MBR) disks **16**
maximum number of tasks **74**
Microsoft Virtual PC, source **21, 40**
Microsoft Virtual Server, source **21, 40**

N

network, same for source and destination machines **10**

O

online cloning, *See* hot cloning
operating systems, support **19**
other VMware virtual machine, as source **40**
OVF
  customizing **62**
  format for virtual appliances **18**
  product properties **63**
  properties **41**

P

Parallels Desktop, source **21, 40**
port requirements **26**
powered-on machine conversion limitations **22**
powered-on machine, source **38**
progress viewing **76**

R

remote cloning, defined **13**
remote Converter Standalone server **35**

S

selecting destination **42**
selecting hardware version **42**
selecting sources
  Acronis True Image backup **40**
  ESX host **39**
  ESX managed by vCenter Server **39**
  Microsoft Virtual PC **40**
  other VMware virtual machine **40**
  Parallels virtualization product image **40**
  powered-on machine **38**
  StorageCraft ShadowProtect image **40**
  Symantec LiveState Recovery image **40**
  third-party backup file **38**
  third-party virtual machine **38**
  virtual appliances **38, 41**
  VMware Infrastructure virtual machine **38**
  VMware virtual machine **38**
  VMware Workstation **40**
settings affected by conversion **25**
shutting down Windows services **54**
Simple File Sharing, turning off **27**
starting
  conversion **38**
  machine conversion wizard **38**
starting the configuration wizard **65**
StorageCraft ShadowProtect, source **21, 40**
supported destination types
  ESX host **23**
  vCenter Server **23**
  virtual appliances **23**
  VirtualCenter **23**
  VMware ACE **23**
  VMware Fusion **23**
  VMware Player **23**
  VMware Server **23**
  Workstation **23**
supported operating systems **19**
supported source types
  Acronis True Image **21**
  ESX support **21**
  Hyper-V **21**
  Microsoft Virtual PC support **21**
  Microsoft Virtual Server support **21**
  Parallels Desktop **21**
  powered-on machines **21**
  StorageCraft ShadowProtect **21**
  Symantec LiveState Recovery **21**
  vCenter Server **21**
  virtual appliances **21**
  Virtual Iron **21**
  VirtualCenter support **21**
  VMware Fusion support **21**
  VMware Server support **21**
  VMware virtual machines **21**
  Workstation support **21**
  Xen **21**
Symantec LiveState Recovery, source **21, 40**
system reconfiguration **10**
system requirements
  installation space requirements **20**
  supported operating systems **19**
  TCP/IP port requirements **26**
  Windows operating systems **26**

T

task manager
  adding tasks **74**
  canceling tasks **74, 75**
  checking tasks progress **75**
  combined filtering **78**
  deleting tasks **75**
  editing tasks **75**
  filtering by multiple criteria **78**
  filtering tasks by history **77**
  filtering tasks by status **78**
  number of concurrent tasks **74**
  viewing task progress **76**
Task View, managing tasks with **18**
tasks, adding to list **74**
tasks, editing **74**
tasks, filtering **77**
tasks, managing **73**

TCP/IP port requirements **26**
thin provisioning **52**

U

uninstalling VMware vCenter Converter Standalone
  in Linux **34**
  in Windows **30**
uses for VMware vCenter Converter Standalone **9**

V

VCB, *See* VMware Consolidated Backup
vCenter Server, destination **23, 42**
vCenter Server support **21**
version support **21**
viewing a task's progress **76**
viewing configuration task summary **72**
viewing conversion task summary **64**
viewing the log files **76, 77**
virtual appliance, properties **41**
virtual appliances
  browsing for **41**
  conversion limitations **23**
  converting **17**
  customizing **62**
  destination **23, 44**
  downloading from URL **41**
  overview **18**
  product properties **63**
  source **41**
virtual hardware
  CPU issues **26**
  disk device issues **26**
  Ethernet adapter issues **26**
  graphics card issues **26**
Virtual Iron, source **21**
virtual machines
  configuring **17**
  conversion limitations **22**
  converting **17**
  destination on same network as source **10**
VirtualCenter
  destination **23, 42**
  source **21**
  support **21**
VMware ACE, destination **23, 44**
VMware Consolidated Backup **24**
VMware Fusion
  destination **23, 44**
  source **21**
  support **21**
VMware hosted products, information not preserved when using Converter Standalone **25**
VMware hosted products support **21**
VMware managed products, information not preserved when using Converter Standalone **24**
VMware managed products support **21**
VMware Player
  destination **23, 44**
  source **21**
  support **21**
VMware Server
  destination **23, 44**
  source **21**
  support **21**
VMware vCenter Converter Standalone
  command-line installation in Windows **31**
  features **10**
  installing client in Linux **32**
  installing client in Windows **29**
  installing in Linux **32, 33**
  installing in Windows **29**
  installing remote access in Linux **32, 33**
  installing remote access in Windows **29**
  installing server and agent in Linux **32**
  installing server and agent in Windows **29**
  installing the client in Linux **33**
  installing the server and agent in Linux **33**
  modifying installation in Linux **34**
  modifying installation in Windows **30**
  repairing in Linux **34**
  repairing in Windows **30**
  uninstalling in Linux **34**
  uninstalling in Windows **30**
  uses **9**
VMware Workstation
  destination **44**
  source **40**
volume-based cloning **49**
volume-based cloning, defined **16**
volume, supported types **16**

W

Windows services, shut down **54**
Windows XP, checking Windows Firewall blocks **27**
Windows, Simple File Sharing **27**
Workstation
  destination **23, 44**
  source **21**
  support **21**

X

Xen, source **21**