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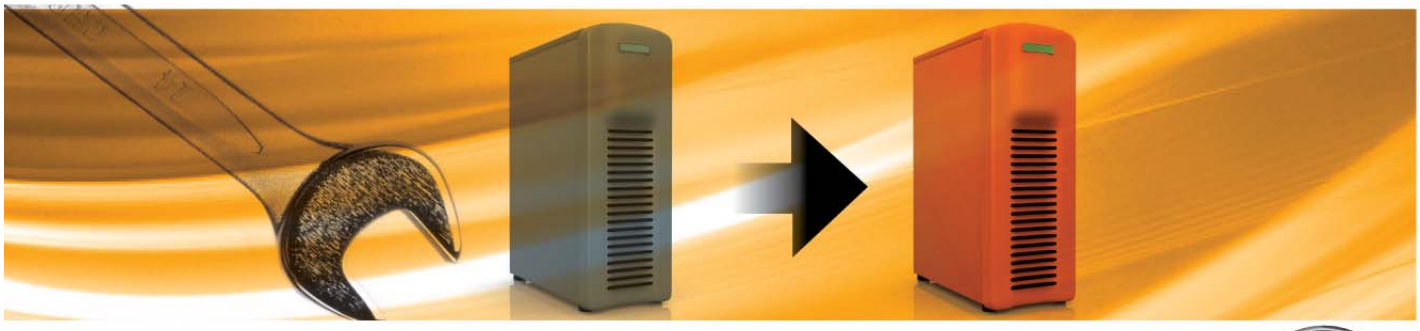
vConverter™



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vConverter User Manual
02/13/09
Version 4.1

Document Revision History

Document Version Number	Issue Date	Description of Change
4.0a	10/31/08	Initial document
4.0b	11/06/08	Updated to include automated PXE installation.
4.1	02/13/09	• Updated to include: VM installation; the ability to change the target during Continuous Protection; new screenprints to reflect UI changes. • Deleted references to options no longer available on the Program Preferences dialog. • Added the Attach HTML Report option to the Email Notifications tab. • Updated licensing procedures. • Deleted Pre-Conversion Setup for Xen if Not Using VA section in Chapter 3. • Deleted references to the click and drag process in Conversion Tasks Scheduler Window section and Reschedule Conversion Job instructions in Chapter 4.

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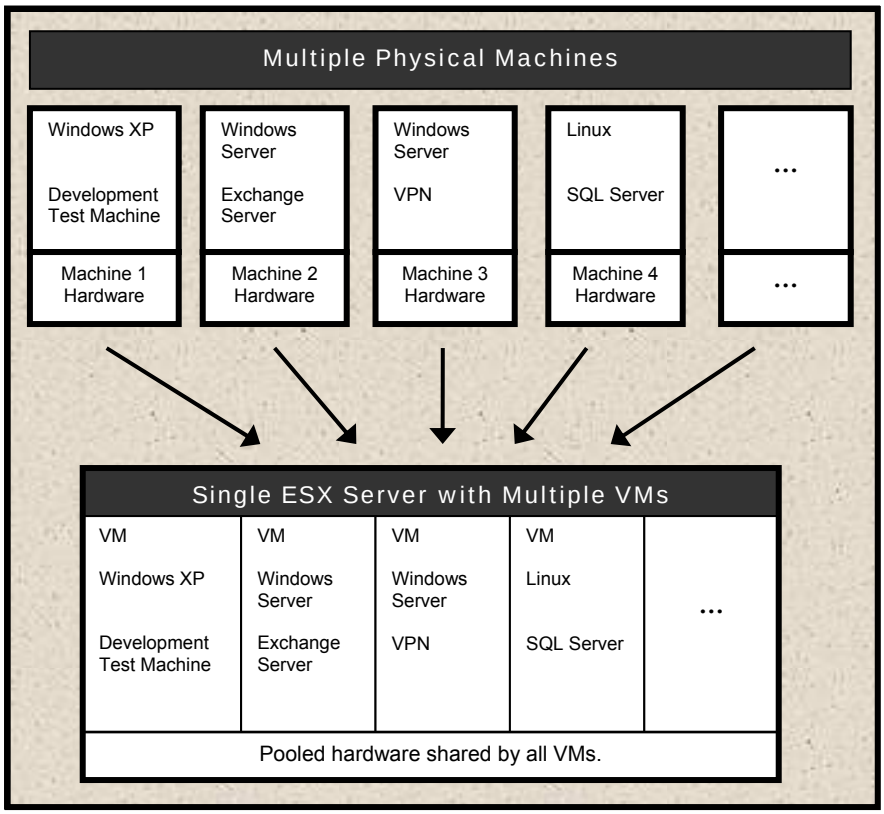
1 Introduction

vConverter™ is a powerful software tool that converts a Windows® operating system (OS) running on a physical machine to a guest OS running on a virtual machine (VM).

Virtualization and VMware Overview

As companies and industries grow, their technology needs change. These changes are often implemented within complex systems running business-critical applications. Usually there is an increased demand for shared hardware and software resources. To manage this demand, many companies establish virtual environments. Doing so can increase an organization's agility and efficiency while lowering its costs.

Most companies have a number of specialized physical servers and workstations that are underutilized. Virtualizing such an environment increases and balances utilization by consolidating the physical machines into a single physical host that runs multiple VMs. The VMs share the resources—processor, memory, network cards, and disks—of the physical host. The work that the physical machines did previously continues, but with greater efficiency. The host runs a layer of virtualization software that manages the environment. Each VM's OS—usually Windows or Linux—functions as if the hardware were physical. Guest software can see only *x* processor, *y* memory, and so forth.



The transition from physical to virtual is seamless. A virtual infrastructure affords maximum flexibility, allowing you to treat VMs as if they were physical hardware and software. VMs can be moved easily between hosts. They can be run in isolation or in groups. Their workloads can be reconfigured as demand requires. This flexibility is supported by management tools.

VMware VirtualCenter (VC) and ESX Server are, respectively, the management server and software components that lend order in a virtual environment. VC orchestrates the configuring and provisioning. VC's database stores all of the information shared between the physical hosts and the VMs. Without compromising security, VC makes it possible to connect to a host remotely from a standard Windows computer.

As its own host OS, ESX Server allows you to establish VMs, configure and manage their shared resources, and make ongoing adjustments to increase performance. Each VM is configured with its own virtual hardware—for example, central processing unit (CPU), random access memory (RAM), and universal serial bus (USB) ports. The work of the VM's physical counterpart is run in its native OS. Because VMs require neither redundant hardware nor physical space, virtualization can mean significant cost savings.

vConverter Overview

vConverter is an enterprise-level consolidation/migration application that is task based. It allows you to capture a live physical or virtual Windows system and transfer its data directly to a Windows shared folder, Xen™, Virtual Iron™, or ESX host. vConverter's physical to virtual (P2V) and virtual to virtual (V2V) approaches ensure consistent results: The converted image will mirror the source. There is no additional software to install on the source. Nor are any helper components required. You need not be present at the source during the conversion process. Both physical and virtual machines can be used as the source, but only a VM can be a target.

With vConverter, configuration is easy—from creating target VMs to controlling services on the source. Many processes are automated, including installation of VMware/Xen Tools, powering off and on source and target, and registering VMs.

Use vConverter to complete individual or multiple conversions immediately or to schedule them. Run conversion jobs from a client machine or from a Command Line Interface (CLI). Resize volumes at the target—to be larger or smaller than they were on the source. vConverter automatically limits the resize to accommodate the existing source data.

A single Virtual Machine Disk Format (VMDK) can hold all source volumes or you can create individual files to hold each volume. You can configure separate locations for each volume. For ESX, VC aligns the partitions on the 64k boundary.

By specifying alternative folder locations for each volume, you can balance the VMDK workload across multiple Virtual Machine File System (VMFS) volumes and multiple storage paths.

The virtual hard disk drive formats supported in vConverter are VMDK files used by VMware, and virtual hard disk (VHD) files used by Microsoft, Xen, and Virtual Iron.

Remote Cold Cloning

There are two ways to clone a server—hot cloning and cold cloning. During the hot cloning process, the server OS continues to run. That is, it is not rebooted during or after a conversion. Cold cloning requires a reboot of the source into VC's boot image. During cold cloning, there is less chance of data corruption mainly because no data files are opened.

When you select Remote Cold Cloning (RCC) as the conversion type, VC sends a boot loader and its boot image over the network to a source. This source boots at a time that you designate, and the conversion begins. RCC is a good option for converting transactional systems such as database and email servers.

Continuous Protection

You can protect datacenter workloads by addressing disaster recovery (DR) through virtualization. Taking a P2V approach, vConverter preserves a virtual backup copy of a physical machine. When you select Continuous Protection as the conversion type, incremental replication is used. During this process, network usage is minimized because only changes to source data files are transferred to the target. You define the intervals at which these transfers occur. You can change target locations between protection intervals. The physical server remains protected while you use its duplicate virtual standby copy. Continuous Protection uses a hot cloning method.

Synchronized Cutover

A cutover is the process of switching from the source VM to the target VM. A cutover window is the period of time on a specific date (or span of dates) when it is acceptable to perform cutover. Pre-synchronized cutover occurs after the initial copying phase of the conversion, when any remaining changes to the source are copied to the target and committed.

Synchronized Cutover allows you to minimize the cutover window by completing a P2V conversion and synchronizing changes on the source to the target at specified intervals (for example, every 15 minutes). This means that before you initiate a cutover with the final synchronization, you can move the majority of data from source to target and test the target workload while continuing to run the source. Synchronized Cutover gives you complete protection across local area networks (LANs) and wide area networks (WANs). Synchronized Cutover uses the hot cloning method for initial and subsequent synchronizations. While cold cloning is used for the final synchronization, you can also trigger a hot (live) final synchronization.

Different Destinations Cutover

When your initial and final targets are different, select Different Destinations Cutover (DDC) as the conversion type. The initial P2V event will target the first destination. The VM can be moved to the second destination. Then, the initial P2V event can be modified to allow the final synchronization to retarget the VM.

Raw Device Mapping

Raw Device Mapping (RDM) is a file in a separate VMFS volume that acts as a proxy for a raw physical device. An RDM provides a VM with direct access to a logical unit number (LUN) on a fiber channel or iSCSI physical storage system. With P2V to RDM, all source volumes to be converted are placed on a single device. Typically, an RDM is useful for utilizing Storage Area Network (SAN) software for replication and snapshots. Input/Output (I/O) improves because multiple servers need not read and write to a LUN; only a VM with access to RDM will do so.

Virtual Appliance for VMware ESXi 3.5 and Xen Embedded

Virtual Appliance (VA) replaces the console operating system (COS) environment. VA is a custom VM that can create and remove virtual disks as well as mount and unmount them. It can also create partitions and write data. VA features a preinstalled and pre-configured environment with all the necessary configurations for conversion. There is no need to install an agent on the target server.

For ESXi 3.5, VA allows you to skip installation of an agent to COS. For Xen Embedded, VA can be run in para- or full-virtualization modes.

User Profiles

Through the fields on vConverter's User Profiles tab you can create one set of credentials to use with multiple source servers. You can create distinct profiles for each system and save them for later use.

Task Profiles

The fields on the Task Profiles tab help you increase multi-conversion process efficiency by allowing you to configure a conversion once and save the settings for future use. These profiles are not associated with specific sources or targets; rather, they define only general settings.

Filtering

Use Filtering to locate systems in large networks easily. You can search networks by system name or IP address. Search criteria can include wildcards and multiple values.

Quick Convert

Use the Quick Convert feature to adapt an existing conversion task profile into a template that can be the basis for new conversion jobs.

Right-sized Virtual Disks

When you select file-based as the transfer mode and change the size of a volume, a target virtual disk is created in that size. For example, if sources C (100GB) and D (500GB) each have less than 10GB, in file-based transfer mode you can set the target to C=25GB and D=25GB. vConverter will pre-create the target virtual disks as 25GB each and transfer only data during conversion.

Windows Disk Resizing

This feature uses a New Technology File System (NTFS) resizing process to increase speed and reduce the amount of time it takes for block-based cloning.

IP Migration

IP Migration allows you to transfer the IP from source physical Network Interface Cards (NICs) to target virtual NICs. vConverter provides the default option of retaining the source server IP configuration.

VM Installation

This feature allows you to install vConverter on a VM either as a stand-alone installation or against an upstream physical machine.

Email Notification

Use Email Notification to configure who receives alerts indicating that a conversion job has started, succeeded, or failed. You can configure the alerts to include relevant log files. You can also request notification of intermediate synchronization status.

Windows Target Server Agent

Provides the ability to replicate a Secure File Transfer Protocol (SFTP) agent on Windows as a Windows service so that P2VDR jobs complete as they do on an ESX Server. Ports a Target Server Agent (TSA) to Windows to speed up writes.

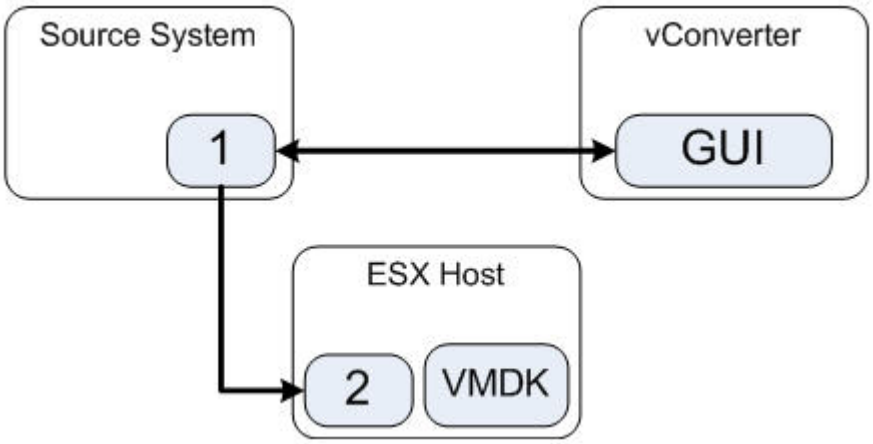
Import/Export Settings

Use these commands to import or export settings that you have defined previously. Reuse these settings across multiple systems and vConverter instances.

Conversion Process Overview

The vConverter architecture includes the GUI, the Source Quiesce, Drive Capture Tool (DCT), Migration Tool, and ESX/Xen Host Daemon. The Source Quiesce, Capture Tool, and Migration Tool are all directed from the GUI onto the source by the Interactive Remote Launch Tool (IRLT). Conversion jobs are configured, scheduled, and initiated by the GUI component. During conversions, job details are sent to the source, which is paused. Data is sent from the source to the target ESX/Xen host. Status messages are returned from the Source Server Capture Driver (SSCD) to update the information in the GUI. Upon completion of the data transfer, the ESX/Xen Host Daemon can resize the partitions and perform the P2V conversion steps. The VM is configured with the proper CPU, memory, and network settings, and registered on the ESX host. Then, it is ready to be run as a VM.

Note: For Windows XP and Windows Server 2003, the Microsoft Volume Shadow Copy Service (MS VSS) is used instead of Consistency Driver to enforce consistency for applications.

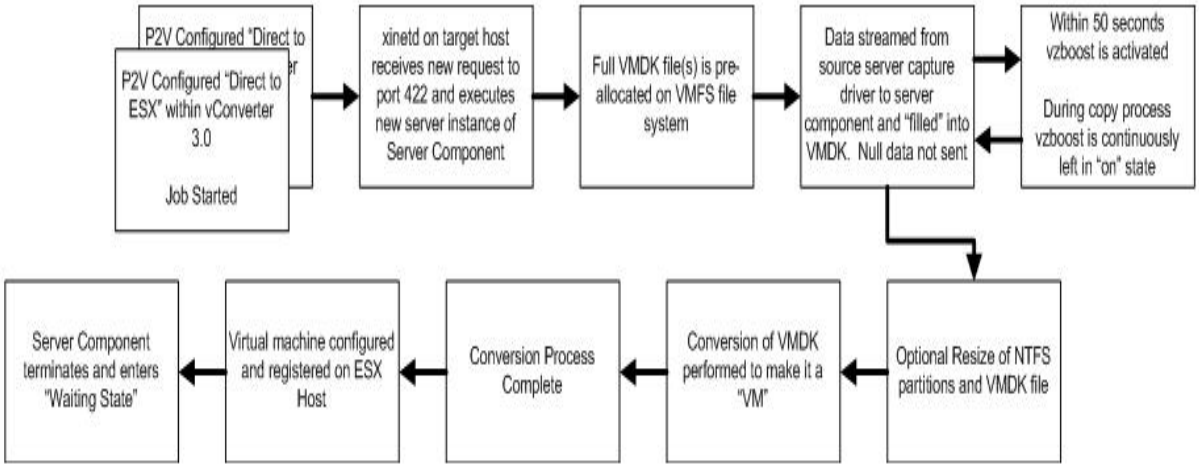


What Is Happening on the ESX Host?

At the ESX host level, the process is extremely fast and flexible with minimal impact to the virtual environment. These application components are used:

- xinetd—The built-in service console method for listening to new traffic and starting server components when required by an external request.
- vzBoost—A controllable VMkernel module that allows data to be written at very fast speeds directly through the service console. vzBoost is an optional installation component.
- sftp-over-tcp—The server component that makes data transfer possible. It is based on the SFTP, with the secure elements eliminated to make it as fast and

lightweight as possible. The data transfer occurs over TCP port 422 into the ESX host.

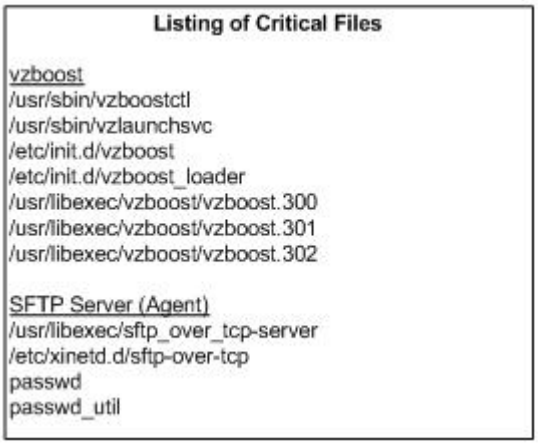


After the job is executed and the DCT starts sending data to ESX, it is detected by the xinetd service running. This starts the server component particular to that job. Multiple jobs can run at the same time and each job will use its own server component instance.

1. To transfer data to the target, a new VMDK file is created. It is the same size as the original source volume. The VMDK file is pre-allocated to avoid file growth. You can specify a unique VMDK file and datastore for each Windows volume.
2. The server component receives block-level data from the DCT and places it in the VMDK file. If a block of zeroed data is detected by the DCT, it is ignored. The zeroes already exist in the VMDK, so there is no reason to overwrite them.
3. Within 50 seconds of the server component executing, the vzBoost module activates to enable high speed data writes into the VMFS. vzBoost monitors the server component and terminates itself upon completion of the data transfer.
4. (Optional) After all data has been transferred to the VMDK file, the server component can resize the files based on job configuration. In this case, the NTFS partition is modified as well.
5. The server component performs the conversion and creates a bootable instance of the VM with the proper drivers. This should prevent blue screen errors on system startup.
6. A VM is created and registered on the ESX host based on job configuration settings that include assigned memory, VHD, and virtual network assignment.
7. The server component terminates and enters a wait state—controlled through xinetd—to anticipate the next job.

What Is Changing on the ESX Host?

The installation of the ESX Host Agent adds these files to the host:



The installation of the ESX Server Daemon makes these changes to the host configuration:

- Adds S79vzloader to the /etc/rc3.d startup script list.
- Adds S80vzboost to the /etc/rc3.d startup script list.
- Adds sftp-over-tcp to the /etc/xinetd.d script list.
- Opens the iptables firewall port 422 to allow incoming communication to the data transfer component.

Hot and Cold Cloning

vConverter offers two approaches for converting physical or virtual servers to VM targets. Hot cloning allows the source OS to continue to run while cold cloning requires a source reboot. Whether you use the block- or file-based methods, during cold cloning no changes are made in the source's file system.

Hot cloning is the process of taking a live source system and creating a complete copy of it in the form of a VM. To yield a data-consistent image, Vizioncore Consistency Driver (VCD) and MS VSS assist in the process. VCD captures write requests from the file system and retains the former state of the updated disk sectors. VCD is unaware of running applications on the source and therefore cannot save associated data for backup. This is where MS VSS steps in—telling databases, application servers, and so forth to flush uncached data to disk so that backup can proceed.

There are two types of cold conversion—manual and remote. During manual cold conversion, the source is manually booted using a VistaPE ISO boot image burned to a CD. You manually create and control the conversion.

There are three types of remote conversion. During RCC, you schedule a conversion. When the job starts, a new boot loader and boot image are sent to the source. At a time that you designate, the source reboots in Vizioncore's boot environment. After the boot image brings the source onto the network, the conversion monitor component connects to

vConverter. The conversion completes. You need not be present at the source machine during conversion.

During the less automated RCC process, you can boot into the source's PXE environment. Then, the PXE connects to vConverter's PXE Service. (Note: To do this, you must start PXE service. PXE is added automatically when you install vConverter.) After the source connects to the PXE Service, VC automatically sends its boot image to the source. Then, the source boots into the cold cloning boot image. At this point, you must confirm that the source is on the network. Then, you must locate the source in VC and manually convert it.

This is how the process works when the conversion type is set to RCC:

1. vConverter sends a new boot loader to the source.
2. vConverter sends the VistaPE boot image file directly to the source and initiates a reboot.
3. The source boots into the vConverter boot image and instantiates the network stack.
4. vConverter establishes contact with the conversion monitor and initiates the conversion process.
5. Once conversion is complete, the source restarts and boots into its previous boot environment with the previous boot loader intact.

There are a few options for using a boot image based on the Windows Vista OS.

- Download Vista PE .ISO image from the Vizioncore website and burn it to a CD. From the CD, boot the system to be converted. When booting completes, the source will display in vConverter's Network Browsers pane. This is called manual cold conversion.
- Use Vista PE boot .wim and PXE service for machines that support PXE. From a remote system, reboot the source and use F12 to boot from the network. The source server will display in vConverter's Network Browser pane under an object named Cold cloning ready (under VistaPE). This is called RCC.
- Use Vista PE boot .wim and RCC. The boot image is transferred to a working source system. This requires 300MB of free space on each active partition. The boot loader code is replaced. The source is rebooted remotely into the boot image. The F12 sequence runs automatically. As Vista PE loads, the original boot area is restored. When loading is complete, the boot image is removed from the source.

Note: If you have any trouble loading Vista PE, see the *Manually Install a NIC Device to Work with VistaPE* section in the Appendix. Also, confirm driver compatibility by checking your drivers against the list provided in *Drivers* section of the Appendix.

File-based and Block-based Cloning

Cloning can be block- or file-based. Only data is transferred during these processes; whitespace is not. File-based cloning of a source occurs on the file system level. The target is mounted to the source and a full file synchronization occurs—directory structure from the source and all file content are updated to the target. File-based cloning is ideal for capturing large source volumes to a target with limited storage capacity. To ensure consistency during hot cloning, use the file-based method with MS VSS.

Block-based cloning uses an Application Programming Interface (API) from the source OS that allows you to skip unused sectors. This is the default transfer mode, yielding an exact binary copy of a source volume. This mode requires that the source and target disks be the same size. After conversion, you can resize down the target volume.

The IRLT is used during block-based cloning and is removed when the conversion completes. It gives you full mounting, capture, migration, and restore capability on any remote system. It allows you to run an application on any Windows 2000 or 2003 system. You do not need to install any agents to use IRLT, but you must have administrative credentials on the source. Two run-time drivers on the source are used as well—VCD and Disk Image Driver (DID).

This is how IRLT works:

1. It connects to the source—to default shares ADMIN$ and IPC$—using administrative credentials.
2. It creates a new folder within ADMIN$ share and copies necessary tools (vcct.exe [Vizioncore Capture Tool] and others) to launch.
3. It installs its proxy service on the source using the Win32 Service Manager API.
4. It runs the service that launches the target application, redirects input and output streams (if necessary), and awaits completion of the launched application.
5. It uninstalls the service and removes all of the files (CT, VCD, and DID) written to the source.

The target is mounted to the source and a full file synchronization occurs—directory structure from the source and all file content are updated to the target.

Notes: You can only complete a cold conversion of Windows NT SP6a or Windows 2000 using the file-based method. Although resizing down is a more complex process than increasing the size of a volume, both options are available in file- and block-based cloning.

Conversion Types

When you create a conversion job manually (rather than through the vConverter Wizard) and define its properties, you must select a conversion type. These conversion types are available:

- Manual—Select this method if you want to run a conversion job immediately rather than scheduling it.

- Single Conversion—This method allows you to create and run a one-time scheduled conversion job.
- Remote Cold Cloning—Minimizes the risk of data corruption because no files are opened during the process.
- Synchronized Cutover—The first synchronization is block-based, followed by a file-based synchronization without MS VSS.
- Continuous Protection—This mode requires MS VSS, so it cannot be used to convert Windows 2000 systems.
- Different Destinations Cutover—This method allows synchronized cutover to initialize to a specific target.

For instructions on using each conversion type, see Chapter 4.

Using this Manual

Terms and Acronyms

This is a list of terms and acronyms that are used in this manual.

Term or Acronym	Definition
API	Application Programming Interface
CLI	Command Line Interface
CLI Tool	Use as an executable or as DLLs to run conversions without the vConverter GUI.
Client Machine	The machine on which vConverter is installed. Acts like a dispatcher initiating conversion jobs. The client uses the IRLT, protocol, and network credentials to launch the software on the source.
Cold Cloning Ready	The name of the tree in the Network Browser pane that contains the servers available for RCC.
COS	Console Operating System
CPU	Central Processing Unit
Cutover	The process of switching from the source to the converted target VM.
Cutover Window	A period of time on a specific date (or span of dates) when it is acceptable to begin cutover.
DCT	Drive Capture Tool—Runs on the source and features Consistency Driver. Reads disk data and tracks changes, which are transferred to the target.
DDC	Different Destinations Cutover
DHCP	Dynamic Host Configuration Protocol
DID	Disk Image Driver
DNS	Domain Name System
DR	Disaster Recovery
Drive Image Mount Tool	Shows drive image file content as a separate disk with read-only and read/write. Uses the Virtual Disk Driver for mounting the image.
ESX 2.x	Version 2.x of ESX Server
FQDN	Fully Qualified Domain Name
GB	Gigabyte
Guest	A VM that runs on an ESX Server.

Term or Acronym	Definition
HAL	Hardware Abstraction Layer
Host	A physical ESX Server that runs VMs.
iSCSI	Small Computer System Interface
I/O	Input/Output
IRLT	Interactive Remote Launch Tool—Use to run an executable on a remote Windows system.
IP address	Internet Protocol (address)
LAN	Local Area Network
Licensing Service	A vConverter unit that maintains license and time restriction information as well as a list of systems to convert. Must be run on a physical machine.
LUN	Logical Unit Number
MAC address	Media Access Control (address)
MAPI	Messaging Application Programming Interface
MB	Megabyte
Mb	Megabit
Migration Tool	Runs on the client machine. Updates the Windows registry on the mounted file system to ensure that the system is bootable and functioning after moving to the target virtual platform. In post-conversion, installs VMware Tools for the target; runs scripts in the migrated system at first boot; and uninstalls software from the migrated system.
MS VSS	Microsoft Volume Shadow Copy Service makes remote API call communication possible. Works to freeze and thaw application writes during conversions.
NIC	Network Interface Card
NTFS	New Technology File System
OS	Operating System
P2V	Physical to Virtual
PXE	Preboot Execution Environment—Delivers boot image files to remote systems via TFTP.
PXE Service	Uses the network to transfer the Vista PE image to targets.
RAM	Random Access Memory

Term or Acronym	Definition
RCC	Remote Cold Cloning
RDM	Raw Device Mapping—A file that resides on a datastore (vmfs volume). Using RDM, all source volumes to be converted are placed in a single device. RDM file has a .vmdk extension.
RPC/DCOM	Remote Procedure Call/Distributed Component Object Model
SAN	Storage Area Network
SSCD	Source Server Capture Driver
SFTP	Secure File Transfer Protocol
SMP	Symmetrical Multi-Processing
SMTP	Simple Mail Transfer Protocol
Source Machine	The machine to be captured and converted to the target.
Source Server	Refers to the physical system with the host OS that is to be converted to a VM. The source server is dynamically converted into a guest OS.
SSH	Secure Shell Access; a network protocol used to exchange data between CPUs across a secure channel.
su	switch user
Target Machine	The machine to which the source's conversion is written directly.
Target Server	Refers to disk space on a physical server, where the host OS from the source server is sent and stored.
Target Server Agent for ESX Server	An application that manages incoming requests such as reading and writing data and creating and resizing disk images; It is run on the COS of an ESX Server by xinetd daemon.
Target Server Agent for Windows	Runs on a target system and increases performance in writing disk image. Especially effective for capturing images in flat format, where initial allocation of disk space can take significant time when done over the network. Also the agent allows for basic data compression to reduce traffic usage.
Target Server Agent for XenServer or ESX Server	Runs either in "ring 0" level in XenServer or in VA deployed on ESX Server/XenServer. The only way to store images on VMware ESX 3i servers is to use VA and TSA. All TSAs use a simplified version of SFTP protocol to transfer the data. The simplification removes the underlying SSH connection to speed data transfer, and adds its own authentication to prevent unauthorized access.
TFTP	Trivial File Transfer Protocol

Term or Acronym	Definition
TSA	Target Server Agent
UI	User Interface
UNC Connection	Even though vConverter uses a UNC to point to the target server, you may select a target drive letter path (e.g., D:\TEMP) instead. To allow capturing to a local path, vConverter automatically creates a share with strict permissions to allow the source to access the target. This share is removed once capturing is complete. If you do not want to use a share, you must use a UNC.
USB	Universal Serial Bus
UUID	Universally Unique Identifier
V2V	Virtual to Virtual
VA	Virtual Appliance—For ESX Server or XenServer, VA is a VM template that replaces the COS. It can mount and unmount and create and remove virtual disks. It can also create partitions.
VC	VMware VirtualCenter; a management server within a virtualized environment.
VCB	VMware Consolidated Backup
VCD	Vizioncore Consistency Driver
VDD	Virtual Disk Driver
VHD	Virtual Hard Disk
VIC	Virtual Infrastructure Client
VI3	VMware Infrastructure 3 (including ESX Server v3.x)
VM	Virtual Machine
VMDK	Virtual Machine Disk Format; a disk file that stores a VM's hard drive contents.
VMFS	Virtual Machine File System; VMware's cluster file system, which stores VM disk images.
VMX	VMware Virtual Machine Configuration
VMXNET	A driver that increases networking performance.
vzBoost	An optional driver installed on the target ESX host; improves write speeds to the VMFS. This module will only manage traffic within the Service Console and will not impact I/O operations for running VMs.
WAN	Wide Area Network
Windows Vista	An image based on the Windows Vista installation; includes network

Term or Acronym	Definition
PE	and disk adapter drivers.
WMI	Windows Management Instrumentation

Note: Within the application, click this icon  to access balloon help text for the topic adjacent to the icon.

vConverter Licensing

Each vConverter license allows for one P2V conversion. After each successful conversion, the number of available conversions is decremented from the license. Unsuccessful or cancelled conversions do not decrement licensing.

vConverter's upstream licensing method allows for centralized use and management of just one serial number. That is, if you have 1,000 servers to convert you can purchase a single serial number and distribute the vConverter executable to a large number of workstations. These downstream workstations can activate their installation using the central system that was activated originally.

If you do not have a permanent license, a trial license will be generated for you automatically. Each trial license allows for three conversion jobs; the license expires after 14 days.

There are two types of vConverter licenses—Server Consolidation and DR Enabled. For information on both, refer to the Licensing Model Guide in the Documentation area of the Vizioncore website.

Contacting Dell

Note: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.
Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit http://support.dell.com.
2. Verify your country or region in the **Choose A Country/Region** drop-down menu at the bottom of the page.
3. Click **Contact Us** on the left side of the page.**Note:** Toll-free numbers are for use within the country for which they are listed.
4. Select the appropriate service or support link based on your need.
5. Choose the method of contacting Dell that is convenient for you.

Country (City) International Access Code Country Code City Code	**Service Type**	**Area Codes,** Local Numbers, and Toll-Free Numbers Web and E-Mail Addresses
Anguilla	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.Dell.com/ai la-techsupport@dell.com toll-free: 800-335-0031
Antigua and Barbuda	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.Dell.com.ag la-techsupport@dell.com 1-800-805-5924
Aomen	Technical Support Dell™ Dimension™, Dell Inspirion™, Dell Optiplex™, Dell Lattitude™, and Dell Precision™ Servers and Storage	0800-105 0800-105
Argentina (Buenos Aires) International Access Code: 00 Country Code: 54 City Code: 11	Web Address E-Mail Address for Desktop and Portable Computers E-Mail Address for Servers and EMC® Storage Products Customer Service Technical Support Technical Support Services Sales	www.dell.com.ar la-techsupport@dell.com la_enterprise@dell.com toll-free: 0-800-444-0730 toll-free: 0-800-444-0733 toll-free: 0-800-444-0724 0-800-444-3355
Aruba	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.Dell.com/aw la-techsupport@dell.com toll-free: 800-1578
Australia (Sydney) International Access Code: 0011 Country Code: 61	Web Address Contact Dell Web Address Technical Support., Customer Service, Sales	support.ap.dell.com support.ap.dell.com/contactus

City Code: 2		13DELL-133355
Austria (Vienna) International Access Code: 900 Country Code: 43 City Code: 1	Web Address E-Mail Address Home/Small Business Sales Home/Small Business Fax Home/Small Business Customer Service Home/Small Business Support Preferred Accounts/Corporate Customer Service Preferred Accounts/Corporate Customer Switchboard	Support.euro.dell.com Tech_support_central_europe@dell.com 0820 240 530 00 0820 240 530 49 0820 240 530 14 0820 240 530 17 0820 240 530 16 0820 240 530 17 0820 240 530 00
Bahamas	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.dell.com/bs la-techsupport@dell.com toll-free: 1-866-874-3038
Barbados	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.dell.com/bb la-techsupport@dell.com 1-800-534-3142
Belgium (Brussels)	Web Address General Support General Support Fax Customer Service Corporate Sales Fax Switchboard	Support.euro.dell.com 02 481 92 88 02 481 92 95 02 713 15 65 02 481 91 00 02 481 91 99 02 481 91 00
Bolivia	Web Address E-Mail Address Technical Support., Customer Service, Sales	www.dell.com/bo la_techsupport@dell.com toll-free: 800-10-0238
Brazil International Access Code: 00 Country Code: 55 City Code: 51	Web Address E-Mail Address Customer Service and Tech Support Technical Support Fax Customer Service Fax Sales	www.dell.com/br BR_TechSupport@dell.com 0800 970 3355 51 2104 5470 51 2104 5480 0800 722 3498
British Virgin Islands	Technical Support, Customer Service, Sales	toll-free: 1-866-278-6820
Brunei Country Code: 673	Technical Support (Penang, Malaysia) Customer Service (Penang, Malaysia) Transaction Sales (Penang, Malaysia)	604 633 4966 604 633 4888 604 633 4955
Canada (North York, Ontario) International Access Code: 011	Online Order Status Web Address AutoTech (automated Hardware and Warranty Support) Customer Service Home/Home Office Small Business Medium/Large Business, Government, Education **Hardware Warranty Phone Support** Computers for Home/Home Office	www.dell.ca/ostatus support.ca.dell.com toll-free:1-800-247-9362 toll-free:1-800-847-4096 toll-free:1-800-906-3355 toll-free:1-800-387-5757 toll-free:1-800-847-4096

	Computers for Small/Medium/Large Business Government	toll-free:1-800-387-5757
	Printers, Projectors, Televisions, Handheld, Digital Jukebox, and Wireless Sales	1-877-335-5767
		toll-free:1-800-999-3355
	Home and Home Office Sales	toll-free:1-800-387-5752
	Small Business	toll-free:1-800-387-5755
	Medium/Large Business, Government	1 866 440 3355
	Spare Parts and Extended Service	
Cayman Islands	E-Mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	1-877-262-5415
Chile (Santiago)	Web Address	www.dell.com/cl
Country Code: 56	E-Mail Address	la-techsupport@dell.com
City Code: 2	Sales and Customer Support	toll-free: 1230-020-4823
China (Xiamen)	Technical Support Web Address	support.dell.com.cn
Country Code: 86	Technical Support E-Mail Address	support.dell.com.cn/email
City Code: 592	Customer Service E-Mail Address	customer_cn@dell.com
	Technical Support Fax	592 818 14350
	Technical Support – Dimension and Inspiron	toll-free: 800 858 2969
	Technical Support – OptiPlex, Lattitude and Dell Precision	toll-free: 800 858 0950
	Technical Support – Servers and Storage	toll-free: 800 858 0960
	Technical Support – Projectors, PDAs, Switches, Routers, etc	toll-free: 800 858 2920
	Technical Support – Printers	toll-free: 800 858 2311
	Customer Service	toll-free: 800 858 2060
	Customer Service Fax	592 818 1308
	Home and Small Business	toll-free: 800 858 2222
	Preferred Accounts Division	toll-free: 800 858 2557
	Large Corporate Accounts GCP	toll-free: 800 858 2055
	Large Corporate Accounts Key Accounts	toll-free: 800 858 2628
	Large Corporate Accounts North	toll-free: 800 858 2999
	Large Corporate Accounts North Government and Education	toll-free: 800 858 2955
	Large Corporate Accounts East	toll-free: 800 858 2020
	Large Corporate Accounts East Government and Education	toll-free: 800 858 2669
	Large Corporate Accounts Queue Team	toll-free: 800 858 2572
	Large Corporate Accounts South	toll-free: 800 858 2355
	Large Corporate Accounts West	toll-free: 800 858 2811
	Large Corporate Accounts Spare Parts	toll-free: 800 858 2621
Columbia	Web Address	www.dell.com/co
	E-Mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	01-800-915-4755
Costa Rica	Web Address	www.dell.com/cr
	E-Mail Address	la-

	Technical Support, Customer Service, Sales	techsupport@dell.com 0800-012-0231
Czech Republic (Prague) International Access Code: 00 Country Code: 420	Web Address E-Mail Address Technical Support Customer Service Fax Technical Fax Switchboard	support.euro.dell.com czech_dell@dell.com 22537 2727 22537 2707 22537 2714 22537 2728 22537 2711
Denmark (Copenhagen) International Access Code: 00 Country Code: 45	Web Address Technical Support Customer Service – Relational Home/Small Business Customer Service Switchboard – Relational Switchboard Fax – Relational Switchboard – Home/Small Business Switchboard Fax – Home/Small Business	Support.euro.dell.com 7023 0182 7023 0184 3287 5505 3287 1200 3287 1201 3287 5000 3287 5001
Dominica	Web Address E-Mail Address Technical Support, Customer Service, Sales	www.dell.com/dm la-techsupport@dell.com toll-free: 1-866-278-6821
Dominican Republic	Web Address E-Mail Address Technical Support, Customer Service, Sales	www.dell.com/do la-techsupport@dell.com 1-800-156-1588
Ecuador	Web Address E-Mail Address Technical Support, Customer Service, Sales (Calling from Quito) Technical Support, Customer Service, Sales (Calling from Guayaquil)	www.dell.com/ec la-techsupport@dell.com toll-free: 999-119-877-655-3355 toll-free: 1800-999-119-877-655-3355
El Salvador	Web Address E-Mail Address Technical Support, Customer Service, Sales	www.dell.com/sv la-techsupport@dell.com 800-6132
Finland (Helsinki) International Access Code: 990 Country Code: 358 City Code: 9	Web Address E-Mail Address Technical Support Customer Service Switchboard Sales under 500 employees Fax Sales over 500 employees Fax	support@euro.dell.com fi_support@dell.com 0207 533 555 0207 533 538 0207 533 533 0207 533 540 0207 533 530 0207 533 533 0207 533 530
France (Paris) (Montpellier) International Access	Web Address **Home and Small Business** Technical Support	Support.euro.dell.com

Code: 00 Country Code: 33 City Codes: (1) (4)	Customer Service Switchboard Switchboard (calls from outside of France) Sales Fax Fax (calls from outside of France) **Corporate** Technical Support Customer Service Switchboard Sales	0825 387 270 0825 832 833 0825 004 700 04 99 75 40 00 0825 004 700 0825 004 701 04 99 75 40 01 0825 004 719 0825 338 339 01 55 94 71 00 01 55 94 71 00
Germany (Frankfurt) International Access Code: 00 Country Code: 49 City Code: 69	Web Address E-mail Address Technical Support Home/Small Business Customer Service Global Segment Customer Service Preferred Accounts Customer Service Large Accounts Customer Service Public Accounts Customer Service Switchboard	support.euro.dell.com tech_support_central_europe@dell.com 069 9792-7200 0180-5-224400 069 9792-7320 069 9792-7320 069 9792-7320 069 9792-7320 069 9792-7000
Greece International Access Code: 00 Country Code: 49	Web Address Technical Support Gold Service Technical Support Switchboard Gold Service Switchboard Sales Fax	Support.euro.dell.com 00800-44 14 95 18 00800-44 14 00 83 2108129810 2108129811 2108129800 2108129812
Grenada	Web Address E-Mail Address Technical Support, Customer Service, Sales	www.dell.com/gd la-techsuppo@dell.com toll-free: 1-866-540-3355
Guatemala	Web Address E-Mail Address Technical Support, Customer Service, Sales	www.dell.com/gt la-techsupport@dell.com 1-800-999-0136
Guyana	E-Mail Address Technical Support, Customer Service, Sales	la-techsupport@dell.com toll-free: 1-877-270-4609
Hong Kong International Access Code: 001 Country Code: 852	Web Address Technical Support E-mail Address Technical Support - Dimension and Inspiron Technical Support - OptiPlex, Latitude, and Dell Precision Technical Support - Servers and Storage Technical Support - Projectors, PDAs, Switches, Routers, etc . **Customer Service** Large Corporate Accounts Global Customer Programs Medium Business Division	support.ap.dell.com support.dell.com.cn/email 00852-2969 3188 00852-2969 3191 00852-2969 3196 00852-3416 0906 00852-3416 0910 00852-3416 0907 00852-3416 0908

	Home and Small Business Division	00852-3416 0912 00852-2969 3105
India	Dell Support Website **Portable and Desktop Support** Desktop Support E-mail Address Portable Support E-mail Address Phone Numbers **Server Support** E-mail Address Phone Numbers **Gold Support Only** E-mail Address Phone Numbers **Customer Service** Home and Small Business Large Corporate Accounts **Sales** Large Corporate Accounts Home and Small Business	support.ap.dell.com india_support_desktop@dell.com india_support_notebook@dell.com 080-25068032 or 080-25068034 or your city STD code + 60003355 or toll-free: 1-800-425-8045 india_support_Server@dell.com 080-25068032 or 080-25068034 or your city STD code + 60003355 or toll-free: 1-800-425-8045 eec_ap@dell.com 080-25068033 or your city STD code + 60003355 or toll-free: 1-800-425-9045 India_care_HSB@dell.com toll-free : 1800-4254051 India_care_REL@dell.com toll free : 1800-4252067 1600 33 8044 1600 33 8046
Ireland (Cherrywood) International Access Code: 00 Country Code: 353 City Code: 1	Web Address **Technical Support** E-mail Address Business computers Home computers At Home Support **Sales** Home Small Business	Support.euro.dell.com dell_direct_support@dell.com 1850 543 543 1850 543 543 1850 200 889 1850 333 200

	Medium Business	1850 664 656
	Large Business	1850 200 646
	E-mail Address	1850 200 646
	Customer Service	Dell_IRL_Outlet@dell.com
	Home and Small Business	
	Business (greater than 200 employees)	
	General	
	Fax/Sales fax	01 204 4014
	Switchboard	1850 200 982
	U.K. Customer Service (dealing with U.K.only)	
	Corporate Customer Service (dial within U.K. only)	01 204 0103
	U.K. Sales (dial within U.K. only)	01 204 4444
		0870 906 0010
		0870 907 4499
		0870 907 4000
Italy (Milan)	Web Address	Support.euro.dell.com
International Access Code: 00	**Home and Small Business**	
Country Code: 39	Technical Support	02 577 826 90
City Code: 02	Customer Service	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	Corporate	
	Technical Support	02 577 826 90
	Customer Service	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
Jamaica	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales (dial from within Jamaica only)	1-800-440-9205
Japan (Kawasaki)	Web Address	support.jp.dell.com
International Access Code: 001	Technical Support - Dimension and Inspiron	toll-free: 0120-198-26
Country Code: 81	Technical Support outside of Japan - Dimension and Inspiron	81-44-520-1435
City Code: 44	Technical Support - Dell Precision, OptiPlex, and Latitude	toll-free: 0120-198-433
	Technical Support outside of Japan - Dell Precision, OptiPlex, and Latitude	81-44-556-3894
	Technical Support - Dell PowerApp™, Dell PowerEdge™, Dell PowerConnect™, and Dell PowerVault™,	toll-free: 0120-198-498
	Technical Support outside of Japan - PowerApp, PowerEdge, PowerConnect, and PowerVault	81-44-556-4162
	Technical Support - Projectors, PDAs, Printers, Routers	toll-free: 0120-981-690
	Technical Support outside of Japan - Projectors, PDAs, Printers, Routers	81-44-556-3468
	Faxbox Service	044-556-3490
	24-Hour Automated Order Status Service	
	Customer Service	
	Business Sales Division - up to 400 employees	
	Preferred Accounts Division Sales - over 400 employees	

	Public Sales - government agencies, educational institutions, and medical institutions Global Segment Japan Individual User Individual User Online Sales Individual User Real Site Sales Switchboard	044-556-3801 044-556-4240 044-556-1465 044-556-3433 044-556-5963 044-556-3469 044-556-1657 044-556-2203 044-556-4649 044-556-4300
Korea (Seoul) International Access Code: 001 Country Code: 82 City Code: 2	Web Address Technical Support, Customer Service Technical Support - Dimension, PDA, Electronics, and Accessories Sales Fax Switchboard	Support.ap.dell.com toll-free: 080-200-3800 toll-free: 080-200-3801 toll-free: 080-200-3600 2194-6202 2194-6000
Latin America	Customer Technical Support (Austin, Texas, U.S.A.) Customer Service (Austin, Texas, U.S.A.) Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.) Sales (Austin, Texas, U.S.A.) SalesFax (Austin, Texas, U.S.A.)	512 728-4093 512 728-3619 512 728-3883 512 728-4397 512 728-4600 or 512 728-3772
Luxemborg International Access Code: 00 Country Code: 352	Web Address Support Home/Small Business Sales Corporate Sales Customer Service Fax	Support.euro.dell.com 3420808075 +32 (0)2 713 15 96 26 25 77 81 +32 (0)2 481 91 19 26 25 77 82
Macao Country Code: 83	Technical Support Customer Service (Xiamen, China) Transaction Sales (Xiamen, China)	toll-free: 0800 105 34 160 910 29 693 115
Malaysia (Penang) International Access Code: 00 Country Code: 60 City Code: 4	Web Address Technical Support - Dell Precision, OptiPlex, and Latitude Technical Support - Dimension, Inspiron, and Electronics and Accessories Technical Support - PowerApp, PowerEdge, PowerConnect, and PowerVault Customer Service Transaction Sales Corporate Sales	Support.ap.dell.com toll-free: 1800 880 193 toll-free: 1800 881 306 toll-free: 1800 881 386 toll-free: 1800 881 306 (option 6) toll-free: 1800 888 202 toll-free: 1800 888 213
Mexico International Access Code: 00 Country Code: 52	Web Address E-mail Address Customer Technical Support Sales Customer Service Main	www.dell.com/mx la-techsupport@dell.com 001-877-384-8979 or 001-877-269-3383 50-81-8800 or 01-800-888-3355

		001-877-384-8979 or 001-877-269-3383 50-81-8800 or 01-800-888-3355
Montserrat	E-mail Address Technical Support, Customer Service, Sales	la-techsupport@dell.com Toll-free: 1-866-278-6822
Netherlands Antilles Netherlands (Amsterdam) International Access Code: 00 Country Code: 31 City Code: 20	E-mail Address Web Address Technical Support Technical Support Fax Home/Small Business Customer Service Relational Customer Service Home/Small Business Sales Relational Sales Home/Small Business Sales Fax Relational Sales Fax Switchboard Switchboard Fax	la-techsupport@dell.com support.euro.dell.com 020 674 45 00 020 674 47 66 020 674 42 00 020 674 43 25 020 674 55 00 020 674 50 00 020 674 47 75 020 674 47 50 020 674 47 75 020 674 47 50 020 674 50 00 020 674 47 50
New Zealand International Access Code: 00 Country Code: 64	Web Address E-mail Address Technical Support, Customer Service, Sales	Support.ap.dell.com Support.ap.dell.com/contactus 0800 441 567
Nicaragua	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/ni la-techsupport@dell.com 001-800-220-1377
Norway (Lysaker) International Access Code: 00 Country Code: 47	Web Address Technical Support Relational Customer Service Home/Small Business Customer Service Switchboard Fax Switchboard	Support.euro.dell.com 671 16882 671 17575 231 62298 671 16800 671 16865
Panama	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/pa la-techsupport@dell.com 011-800-507-1264
Peru	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/pe la-techsupport@dell.com 0800-50-669
Poland (Warsaw) International Access Code: 011 Country Code: 48 City Code: 22	Web Address E-mail Address Customer Service Phone Customer Service Sales Customer Service Fax Reception Desk Fax Switchboard	support.euro.dell.com pl_support_tech@dell.com 57 95 700 57 95 999 57 95 999 57 95 806 57 95 998

		57 95 999
Portugal International Access Code: 00 Country Code: 351	Web Address Technical Support Customer Service Sales Fax	Support.euro.dell.com 707200149 800 300 413 800-300-410 or 800-300 -411 or 800-300-412 or 21-422-07-10 21-424-01-12
Puerto Rico	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/pr la-techsupport@dell.com 1-877-537-3355
St. Kitts and Nevis	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/kn la-techsupport@dell.com toll-free: 1-866-540-3355
St. Lucia	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/lc la-techsupport@dell.com toll-free: 1-866-464-4352
St. Vincent and the Grenadines	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/vc la-techsupport@dell.com toll-free: 1-866-464-4353
Singapore International Access Code: 005 Country Code: 65	NOTE: The phone numbers in this section should be called from within Singapore or Malaysia only. Web Address Technical Support - Dimension, Inspiron, and Electronics and Accessories Technical Support - OptiPlex, Latitude, and Dell Precision Technical Support - PowerApp, PowerEdge, PowerConnect, and PowerVault Customer Service Transaction Sales Corporate Sales	 support.ap.dell.com toll-free: 1 800 394 7430 toll-free: 1 800 394 7488 toll-free: 1 800 394 7478 toll-free: 1 800 394 7430 (option 6) toll-free: 1 800 394 7412 toll-free: 1 800 394 7419
Slovakia (Prague) International Access Code: 00 Country Code: 421	Web Address E-mail Address Technical Support Customer Service Fax Tech Fax Switchboard (Sales)	support.euro.dell.com czech_dell@dell.com 02 5441 5727 420 22537 2707 02 5441 8328 02 5441 8328 02 5441 8328 02 5441 7585
South Africa (Johannesburg) International Access Code: 09/091 Country Code: 27	Web Address E-mail Address Gold Queue Technical Support Customer Service	support.euro.dell.com dell_za_suppor@dell.com 011 709 7713 011 709 7710

City Code: 11	Sales	011 709 7707 011 709 7700
Spain (Madrid) International Access Code: 00 Country Code: 34 City Code: 91	Web Address **Home and Small Business** Technical Support Customer Service Sales Switchboard Fax **Corporate** Technical Support Customer Service Switchboard Fax	Support.euro.com 902 100 130 902 118 540 902 118 541 902 118 541 902 118 539 902 100 130 902 115 236 91 722 92 00 91 722 95 83
Sweden (Upplands Vasby) International Access Code: 00 Country Code: 46 City Code: 8	Web Address Technical Support Relational Customer Service Home/Small Business Customer Service Employee Purchase Program (EPP) Support Technical Support Fax	support.euro.dell.com 08 590 05 199 08 590 05 642 08 587 70 527 020 140 14 44 08 590 05 594
Switzerland (Geneva) International Access Code: 00 Country Code: 41 City Code: 22	Web Address E-mail Address Technical Support – Home and Small Business Technical Support – Corporate Customer Service – Home and Small Business Customer Service – Corporate Fax Switchboard	Support.euro.dell.com Tech_support_central_Europe@dell.com 0844 811 411 0844 822 844 0848 802 202 0848 821 721 022 799 01 90 022 799 01 01
Taiwan International Access Code: 002 Country Code: 886	Web Address E-mail Address Technical Support - OptiPlex, Latitude, Inspiron, Dimension, and Electronics and Accessories Technical Support - Servers and Storage Customer Service Transaction Sales Corporate Sales	support.ap.dell.com support.dell.com.cn/email toll-free: 0080 186 1011 toll-free: 0080 160 1256 toll-free: 0080 160 1250 (option 5) toll-free: 0080 165 1228 toll-free: 0080 165 1227
Thailand International Access Code: 001 Country Code: 66	Web Address Technical Support (OptiPlex, Latitude, and Dell Precision) Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault) Customer Service Corporate Sales Transaction Sales	Support.ap.dell.com toll-free: 1800 0060 07 toll-free: 1800 0600 09 toll-free: 1800 006 007 (option 7) toll-free: 1800 006 009 toll-free: 1800 006 006
Trinidad/Tobago	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/ttla-techsupport@dell.com

		toll-free: 1-888-799-5908
Turks and Caicos Islands	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/tc la-techsupport@dell.com toll-free: 1-877-441-4735
U.K.(Bracknell) International Access Code: 00 Country Code: 44 City Code: 1344	Web Address E-mail Address Customer Service Website **Sales** Home and Small Business Sales Corporate/Public Sector Sales **Customer Service** Home and Small Business Corporate Preferred Accounts (500-5000 employees) Global Accounts Central Government Local Government & Education Health **Technical Support** Corporate/Preferred Accounts/PCA (1000+ employees) Other Dell Products **General** Home and Small Business Fax	upport.euro.dell.com dell_direct_support@dell.com support.euro.dell.com/uk/en/ECare/form/home.asp 0870 907 4000 01344 860 456 0870 906 0010 01344 373 185 0870 906 0010 01344 373 186 01344 373 196 01344 373 199 01344 373 194 0870 908 0500 0870 353 0800 0870 907 4006
Uruguay	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/uy la-techsupport@dell.com toll-free: 000-413-598-2521
U.S.A. (Austin, Texas) **International** Access Code: 011 Country Code: 1	Automated Order-Status Service AutoTech (portable and desktop computers) Hardware and Warranty Support (Dell TV, Printers, and Projectors) for Relationship customers Consumer (Home and Home Office) Support for Dell products Customer Service Employee Purchase Program (EPP) Customers Financial Services Web Address Financial Services (lease/loans) Financial Services (Dell Preferred Accounts [DPA]) **Business** Customer Service Employee Purchase Program (EPP) Customer s Support for printers, projectors, PDAs, and MP3 players **Public (government, education, and healthcare)** Customer Service and Support Employee Purchase Program (EPP) Customers Dell Sales	toll-free: 1-800-433-9014 toll-free: 1-800-247-9362 toll-free: 1-877-459-7298 toll-free: 1-800-624-9896 toll-free: 1-800-624-9897 toll-free: 1-800-695-8133 www.dellfinancialservices.com toll-free: 1-877-577-3355 toll-free: 1-800-283-2210 toll-free: 1-800-624-9897 toll-free: 1-800-695-8133 toll-free: 1-877-459-7298 toll-free: 1-800-456-3355 toll-free: 1-800-695-8133

		toll-free: 1-800-289-3355
	Dell Outlet Store (Dell refurbished computers)	or
	Software and Peripherals Sales	toll-free: 1-800-879-3355
	Spare Parts Sales	toll-free: 1-888-798-7561
	Extended Service and Warranty Sales	toll-free: 1-800-671-3355
	Fax	toll-free: 1-800-357-3355
	Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-800-247-4618 toll-free: 1-800-727-8320 toll-free: 1-877-DELLTTY (1-877-335-5889)
U.S. Virgin Islands	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/vi la- techsupport@dell.com toll-free: 1-877-702-4360
Venezuela	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/ve la- techsupport@dell.com 0800-100-4752

2 Installation

In order for vConverter to function properly, there are some general security configurations that need to be set:

- You must have administrator access to the client machine on which vConverter will be installed.
- You need an account with full administrative rights for each source and target server to be configured.
- Windows Management Instrumentation (WMI) and Remote Procedure Call/Distributed Component Object Model (RPC/DCOM) must be enabled on the network. Confirm that WMI has not been disabled through Active Directory security policies.
- Port 135 must be open. (WMI relies on RPC/DCOM, which communicates over port 135.)

Warnings: If a source and target are not in the same domain and there is not a bilateral trust set up between the two domains, conversions will fail. If the client and source cannot contact each other, conversions will fail.

System Requirements

This section describes the hardware and software requirements for vConverter installation.

Location Requirements

You can install the software on a physical or virtual machine. If you install vConverter on a physical machine, make sure that it is running a supported OS.

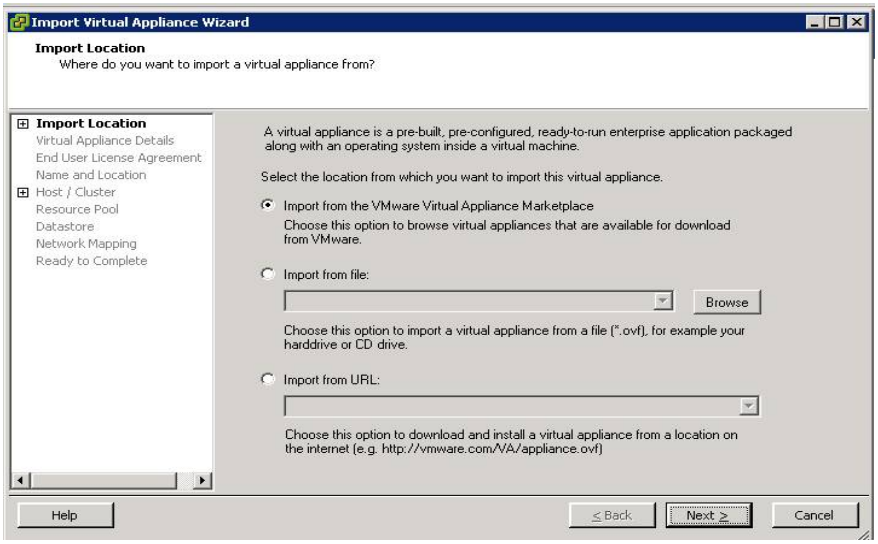
You must have .NET Framework 2.0 installed on the physical machine. You can confirm this by accessing Start→Add or Remove Programs. You can install it through Internet Explorer→Tools→Windows Update or you can download it from the Microsoft website.

The client machine must also meet the following criteria:

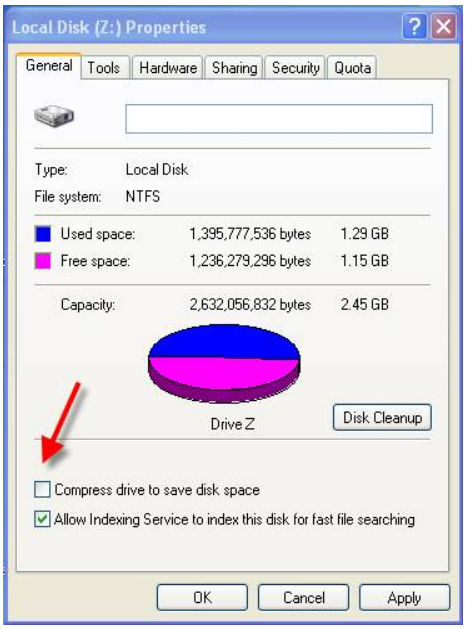
- Pentium III class CPU or greater
- 256MB RAM (512MB recommended)
- 2GB free hard disk space (4GB or greater recommended)
- 1024x768 video resolution (1280x1024 or greater recommended)
- 100Mb/sec or greater network adapter
- Windows Installer 3.1 is needed for installation.

Special Notes on Features

- To use any of these features—Continuous Protection, Synchronized Cutover, or Right-Sized Virtual Disks—the source server must be running Windows XP or Windows Server 2003. These features will not work if the source is running Windows NT4 SP6a or Windows 2000.
- To use the Synchronized Cutover or Continuous Protection features, you must have MS VSS installed.
- To use VA, which is stored in zip/rar format, you must import it from outside the application and configure it. See Chapter 3 for instructions.



- To use RDM, you must enable the option in the software. This is possible only if, on the target server, you have available devices that are not being used by another VM. The P2V to RDM feature will not be accessible in the software if an RDM is not available.
- To use RCC, the source server must have at least 512MB of RAM.
- If the boot volume on the source server is compressed, VistaPE will not load. When the source boots, you will be prompted to restart. The system will remain in the non-bootable state and will need to be reset manually. Before selecting RCC as the conversion type, cancel compression for boot volumes.



OS Requirements

The vConverter executable (setup.exe) works with both 32- and 64-bit OSs.

The following are supported:

OS	Service Pack	Bit Level
Windows Vista Business	N/A	32 and 64
Windows Vista Ultimate	N/A	32 and 64
Windows XP Professional	SP1 and SP2	32 and 64
Windows Server 2003	SP1 and SP2	32 and 64

The following are not supported:

OS	Service Pack	Bit Level
Windows 2003 R2	SP1 and SP2	64
Windows 2008	N/A	32 and 64

Virtualization Platform Compatibility

vConverter is compatible with these virtualization platforms:

- VMware Workstation—any version
- VMware Server
- VMware ESX Server 3.x
- VMware ACE
- XenServer 4.1 and 5.0
- Virtual Iron—any version
- Microsoft Virtual PC 2004
- Microsoft Virtual PC 2007
- Microsoft Virtual Server 2005
- Microsoft Virtual Server 2005 R2

Host Compatibility

vConverter is compatible with these 32-bit OSs (for conversion source):

- Microsoft Windows NT 4.0 SP6a (for RCC only)
- Microsoft Windows 2000 Professional—Base OS, SP1, SP2, SP3, SP4
- Microsoft Windows Server 2000—Base OS, SP1, SP2, SP3, SP4
- Microsoft Windows Server 2003—Base OS, SP1, SP2
- Microsoft Small Business Server—any version
- Windows XP Professional—Base OS, SP1, SP2

vConverter is compatible with these 64-bit OSs (for conversion source):

- Windows Server 2003—Base OS, SP1, SP2
- Small Business Server—any version
- Windows XP Professional—Base OS, SP1, SP2

vConverter is not compatible with these 32-bit OSs (for conversion source):

- Windows Vista Business and Ultimate
- Windows 2008

vConverter is not compatible with these 64-bit OSs (for conversion source):

- Windows Vista Business and Ultimate
- Windows 2008

Port Requirements

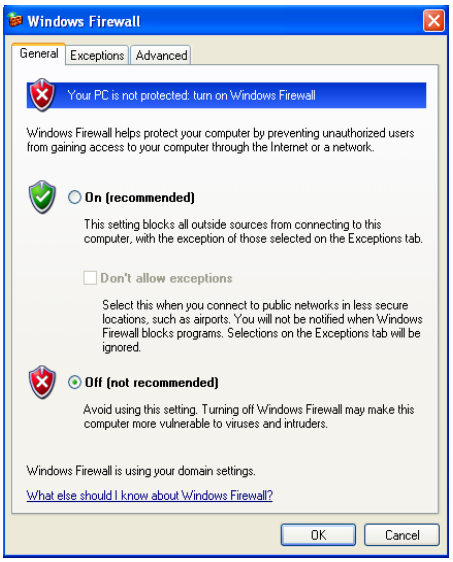
If your environment includes any component (e.g., a firewall) that might restrict communication between the machines to be used in conversion, confirm that these ports allow for unimpeded access before you install the software.

You will need UDP port 422 to enable data transfers directly to the target. Access over secure shell (SSH) TCP 22 and over the VMware SDK (433) to properly communicate with the target are required. From source to target, error checking and reconnect capabilities are in place to assist with troublesome communication links. There are no bandwidth control mechanisms, so conversions will complete only as fast as your available bandwidth allows.

Note: Root SSH access is disabled by default in VI3. Setting up a non-root account and providing vConverter with the root password allows for conversions with root disabled over SSH. Otherwise, enable root over SSH by editing the PermitRootLogin value in sshd_config on the VI3 host: vi /etc/ssh/sshd_config.

Use with Windows Firewall

vConverter uses WMI, which requires RPC. Windows XP SP2 and Windows Server 2003 SP1 install a Windows Firewall, which is turned on by default. This firewall disables RPC (port 135). If vConverter is installed on a machine with Windows Firewall, disable it or enable DCOM for the firewall. To disable it, access Control Panel→Windows Firewall. Do not leave Windows Firewall enabled and select vConverter as an exception. Doing so can impact usability. During conversions, make sure that you turn off the firewall on the source system.



User Accounts and Passwords

For each source and target, you must use a login with appropriate permissions. When inputting administrative credentials, use these formats:

- If machines are part of a domain—Username: Domain\User
- If machines are part of a workgroup—Username: Machine\User

Switch User/Root Access

vConverter requires root access. For security reasons, many ESX Servers are configured so that a root user cannot log in directly from another computer. To gain root access, vConverter must connect with a non-root user ID and then switch user (su) to the root account. For the non-root ID and password, it is best to use the same ID and password that you selected for VC.

Password Security Setting Policy

Weak passwords compromise system security. When you create and update passwords in vConverter, follow as many of these guidelines as your environment allows:

- A password should not include a significant portion of a user or account name.
- Each password should be at least six characters long.
- Passwords should contain characters from several of these categories:

  -Uppercase letters in English (A-Z)

  -Lowercase letters in English (a-z)

  -Digits 0-9

  -Non-alphabetic characters (for example, $, !, #, %)

Vizioncore Support Policy

Vizioncore attempts to support all .dot versions of ESX Server within 60-90 days of release. However, changes to the platform can create unforeseen circumstances, causing an unexpected delay in providing support.

Support for all major versions of ESX Server is to be determined. Vizioncore has the right to change this policy without prior notice or notification.

GSX and ESX 2.x Support

GSX and ESX 2.x are neither tested nor supported for vConverter.

Installing vConverter

Follow the instructions below to install vConverter on a workstation or server. PXE will install automatically. Later, you will have to start PXE service and activate the vConverter license. Since network latency can compromise performance, the software should not be installed on a network drive.

Pre-requisites:

- You must have administrator privileges on the workstation or server on which you install the software.
- You must have access to *setup.exe.*

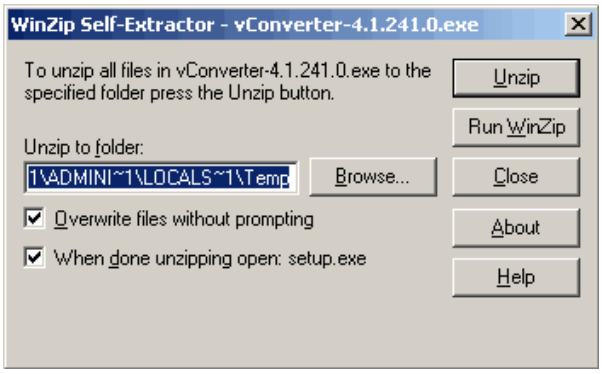
Note: If .NET Framework 2.0 is not installed on your machine, you will be prompted to install it during this process.

Upgrade to New Version of vConverter

To upgrade to a new version of vConverter, there is no need to uninstall any previous version of the software. It will be removed automatically during upgrade installation.

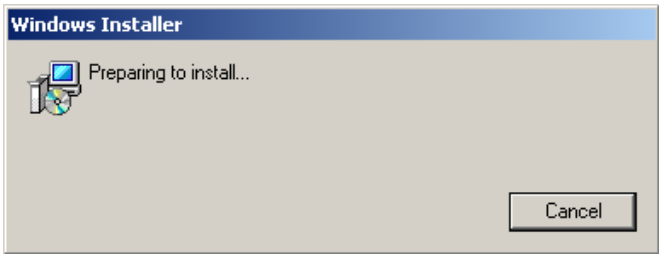
Install vConverter and PXE

1. From the desktop, double-click *setup.exe*.
   The WinZip Self-Extractor dialog displays.

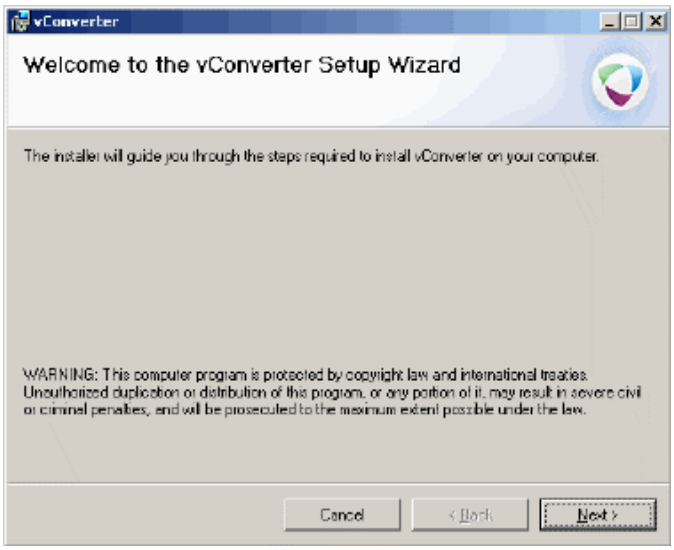


2. Click **Unzip.**

3. Click **OK.**

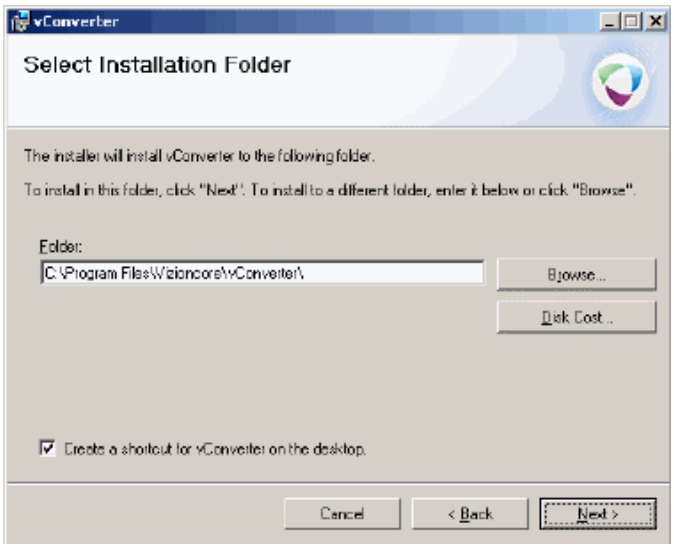


The vConverter Setup Wizard dialog displays.



4. Click **Next.**
   The License Agreement dialog displays.

5. Read the license agreement. If you agree to its terms, select **I Agree.**
   Then, click **Next.**
   The Select Installation Folder dialog displays.

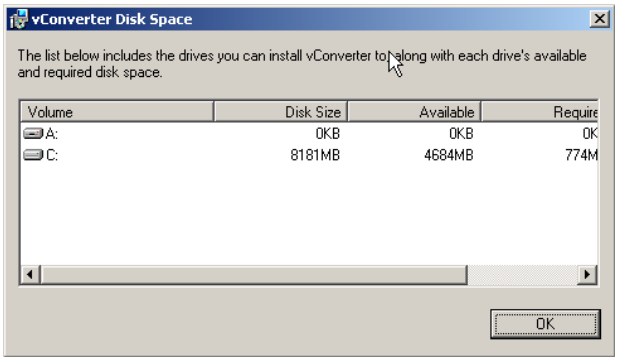


6. In the Folder field, specify the location where vConverter should be installed. The default is C:\Program Files\Vizioncore\vConverter\.

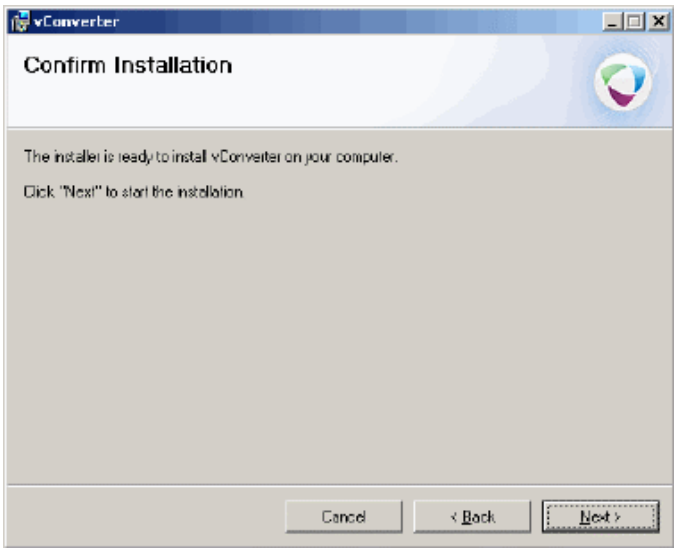
   If you want to change the location, edit the path directly. Or, click **Browse** to select a path. Click to highlight the location and then click **OK.**

   Warning: Do not install vConverter on a network drive.

   To view available disk space for all locations, click **Disk Cost.** Then, click **OK.**

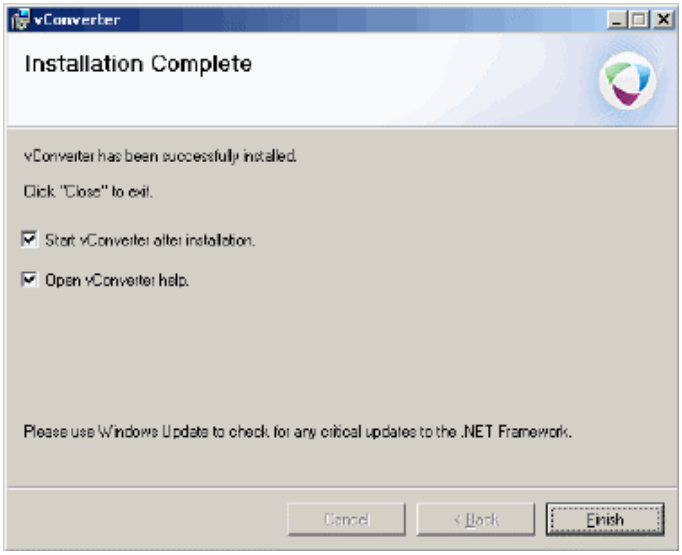


   Click **Next.**
   The Confirm Installation dialog displays.



7. On the Confirm Installation dialog, click **Next.**
   The installation process begins.

   When the process is complete, the Installation Complete dialog displays.

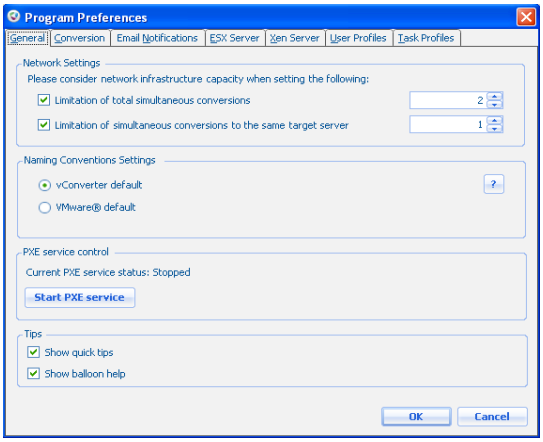


8. Click **Finish.**
   vConverter online help and First Run dialogs display unless you deselected these options.

9. On the First Run dialog, click **Close.**

PXE Service

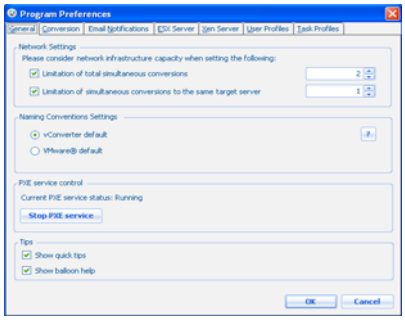
PXE delivers boot image files to remote systems through the Trivial File Transfer Protocol (TFTP). You can start or stop PXE service through the Program Preferences dialog.



Start PXE Service

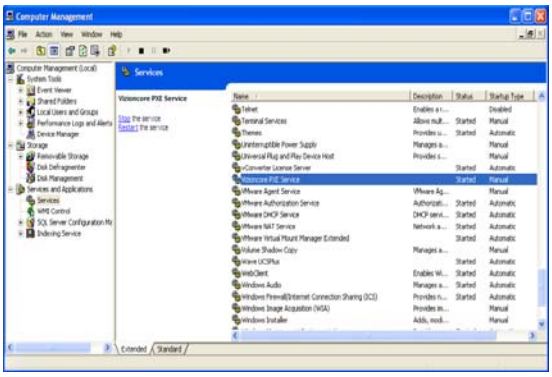
1. First, confirm that PXE service is not running. To do this, you can:

   Access the setting on the General tab of the Program Preferences dialog.

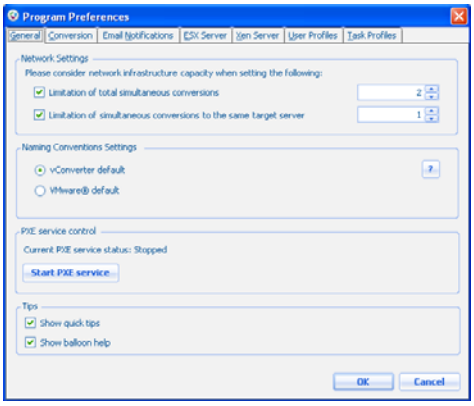


   OR

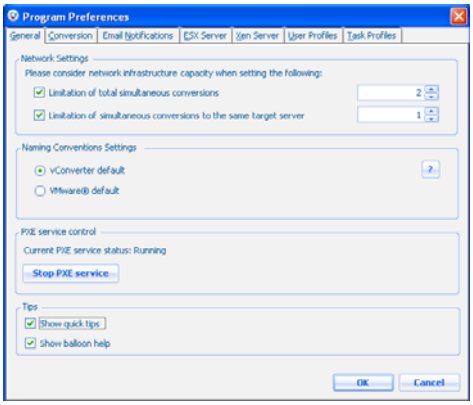
   Right-click **My Computer→Manage→Services and Applications→Services.**



2. From the General tab of the Program Preferences dialog, click **Start PXE service.**



The PXE service control status changes to *Running.*



Account License Activation

Before using vConverter for the first time, you must activate a license. This process requires a serial number, which was emailed to you. If you have not received this email, contact Customer Support for assistance.

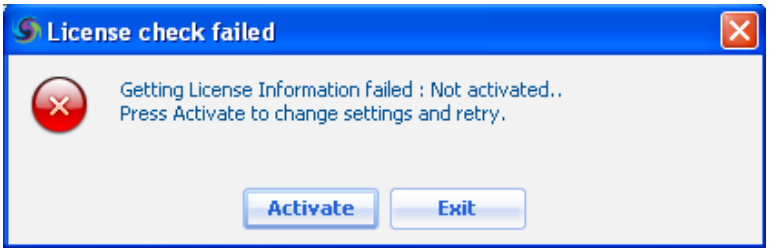
There are several activation methods:

- Online activation
- Offline via email
- Online to an activated upstream system

Warning: Once you have activated a licensed copy of vConverter, you will not be able to reactivate it.

If you need to add additional conversions to an existing vConverter installation, refer to the Update Current License procedures below.

Until you activate licensing, this error message will display when you attempt to use vConverter. Click Activate to open the Activation Wizard and start the license activation process.



Online Activation—Register New License

Completing the online activation process requires a live Internet connection.

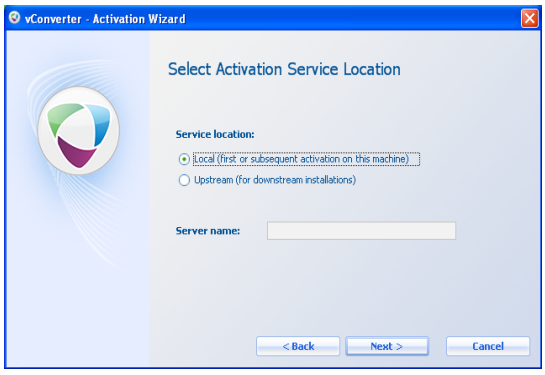
1. From the vConverter window, select **Help→Activation.**

2. On the Activation Wizard, select **Register New License**. Click **Next**.

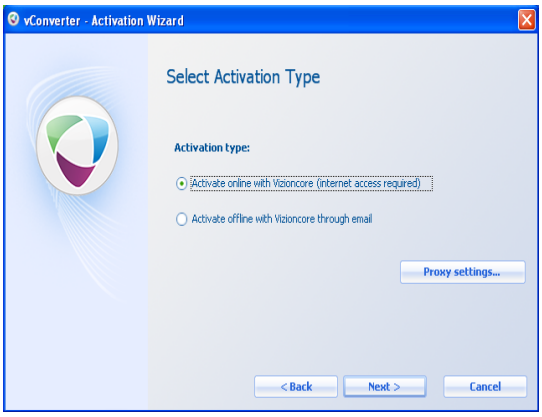
3. Select **Local** and then click **Next.**

   OR

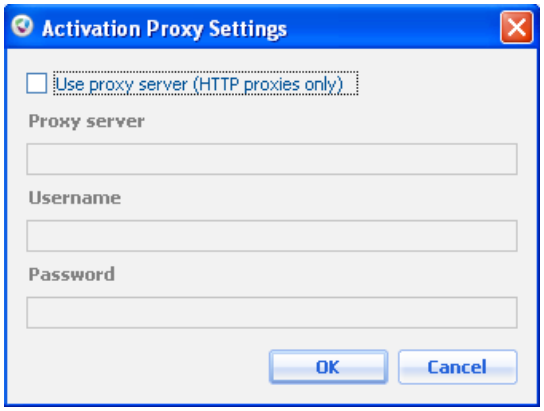
   Select **Upstream**, then populate the Server name field and then click **Next.**



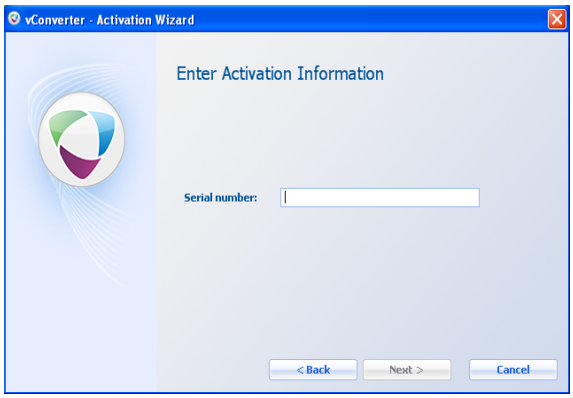
4. Select **Activate online with Vizioncore** and then click **Next.**



5. If you access the Internet through a proxy server, click **Proxy settings.** Populate the fields on the Activation Proxy Settings dialog and click **OK**. Then, click **Next** on the Activation Wizard.



6. Populate the Serial number field. Then, click **Next.**



7. When the activation process has completed, a confirmation dialog displays. Click Finish to launch vConverter.

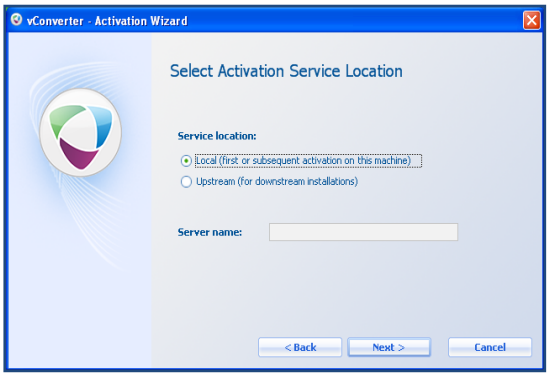
Online Activation—Update Current License

Completing the online license update process requires a live Internet connection.

1. From the vConverter window, select **Help→Activation.**

2. On the Activation Wizard, select **Update Current License**. Click **Next**.

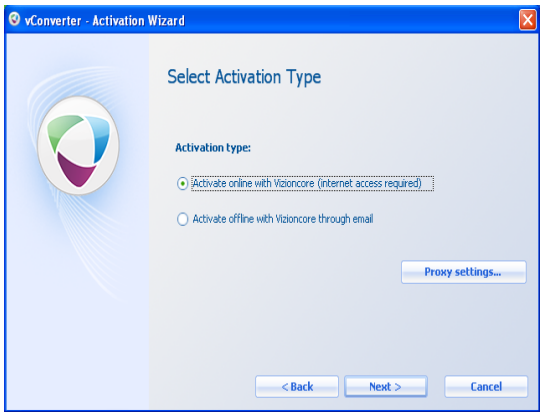
3. On the Activation Wizard, click **Next.**



4. Select **Local** and then click **Next.**

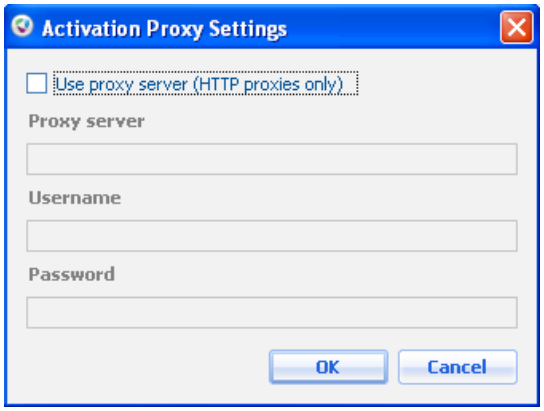
   OR

   Select **Upstream**, then populate the Server name field and then click **Next.**



5. Select **Activate online with Vizioncore** and then click **Next.**

   If you access the Internet through a proxy server, click **Proxy settings.** Populate the fields on the Activation Proxy Settings dialog and click **OK**. Then, click **Next** on the Activation Wizard.



8. Populate the Serial number field. Then, click **Next.**

6. When the activation process has completed, a confirmation dialog displays. Click **Finish** to update vConverter.

Offline Activation via Email—Register New License

You can activate the vConverter license offline via email.

1. From the vConverter window, select **Help→Activation.**

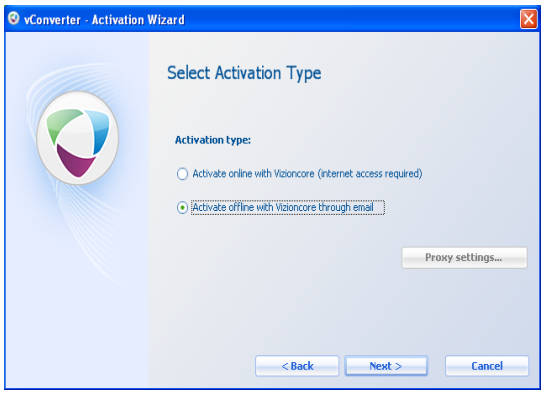
2. On the Activation Wizard, select **Register New License**. Click **Next**.

3. Select **Local** and then click **Next.**

   OR

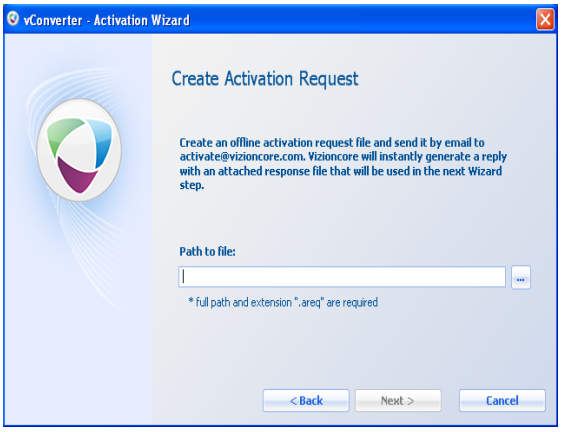
   Select **Upstream**, then populate the Server name field and then click **Next.**

4. Select **Activate offline with Vizioncore through email** and then click **Next.**



5. Populate the Serial number field. Then, click **Next.**
6. Enter an activation request path and filename (e.g., c:\request).
   The file will be created automatically. An .areq suffix will be appended to the filename (e.g., c:\request.areq).

   Note: For future reference, it is a good idea to note the path that you selected.



9. Email the file as an attachment to activate@vizioncore.com. No need to specify a subject or provide details in the email. Vizioncore will validate the serial number and reply with an activation response file (.aresp), activating vConverter.
10. Save the .aresp file to a folder on the computer where vConverter is installed.
11. In the Open response file window, click the browse ellipsis (…) adjacent to the Path to file field. Navigate to the .aresp file and double-click it.
File information displays in the Path to file field.
12. When the activation process has completed, a confirmation dialog displays. Click **Finish** to launch vConverter.

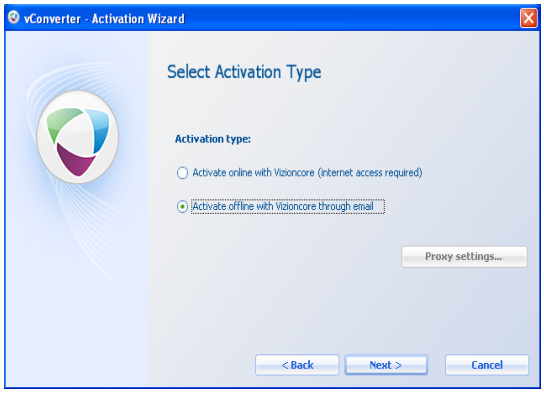
Offline Activation via Email—Update Current License

You can update the vConverter license offline via email.

1. From the vConverter window, select **Help→Activation.**
2. On the Activation Wizard, select **Update Current License**. Click **Next**.

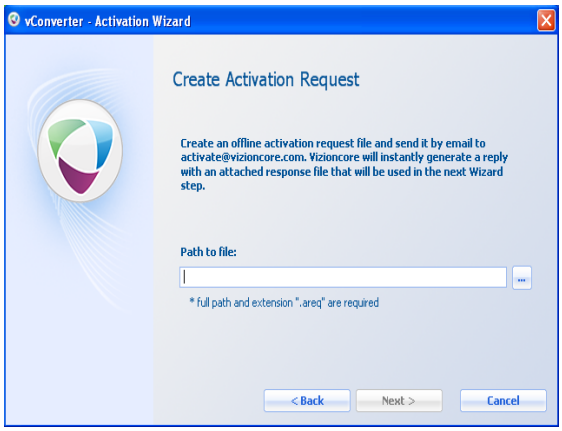
3. Select **Local.** Populate the Server name field and click **Next.**

4. Select **Activate offline with Vizioncore through email** and then click **Next.**



5. Populate the Serial number field. Then, click **Next.**
6. Enter an activation request path and filename (e.g., c:\request).
   The file will be created automatically. An .areq suffix will be appended to the filename (e.g., c:\request.areq).

   Note: For future reference, it is a good idea to note the path that you selected.



13. Email the file as an attachment to activate@vizioncore.com. No need to specify a subject or provide details in the email. Vizioncore will validate the serial number and reply with an activation response file (.aresp), activating vConverter.
14. Save the .aresp file to a folder on the computer where vConverter is installed.
15. In the Open response file window, click the browse ellipsis (…) adjacent to the Path to file field. Navigate to the .aresp file and double-click it.
    File information displays in the Path to file field.
16. When the activation process has completed, a confirmation dialog displays. Click **Finish** to launch vConverter.

Online Activation to Upstream System

Using the upstream approach, you can manage vConverter licensing easily and decrement usage centrally. Upstream activation is particularly useful if you have a large number of conversions to perform with many clients using a single license. You must have RPC/DCOM (port 135) enabled on your network.

- First, plan and activate a central system that can be accessed easily by other systems. By doing this, you make your central system the master license server. You can activate this system online or offline via email.
- Next, distribute both the software for clients to install and the serial number to use during activation.

1. Create the vConverter upstream license server by running the installation and by obtaining a serial number that enables downstream licensing.
2. Activate the serial number using one of the methods described above.
3. Record the license server's IP address and/or Domain Name System (DNS) name. You will be prompted for that information when installing vConverter on downstream computers that are allocated to perform conversions. The license server tracks the number of source systems to be converted.
4. From a downstream computer where you are installing vConverter, point to the upstream license server that has been activated. Start the application.
5. Select **Upstream (for downstream installations).** Enter the computer name or IP address.
6. Once the vConverter computer connects to the upstream license server, the Activation information window will display. On it, enter the serial number and click **Next.**
7. Upon successful activation, click **Finish** to launch the application.

3 Configuration

Configurations

Now that vConverter is installed, you can launch it by double-clicking the desktop icon or by accessing it through the Start menu. The software requires a number of application and environment configurations to ensure that it functions properly. They are described in detail below.

vConverter and ESX VA

VA can be used to help vConverter capture physical hosts. Before you can use ESX VA or Xen VA, you must import it into the virtualization platform and properly configure it. You can use ESX VA with ESX versions 3.5-3i. Earlier versions of ESX do not support virtual disk hot plugging/unplugging.

VA has the Vizioncore SFTP agent running and other specific software to facilitate connectivity for conversion purposes. VA is based on Linux RedHat 5 OS and uses two virtual disks—the first is for the root file system (/) and the second for its environment (/tmp,/var and swap).

ESX VA's configuration is slightly different than Xen's. It also consists of two disks—plugged into different SCSI controllers (LSI logic and Bus logic). This is necessary because there are different virtual disk types in an ESX environment. If you need to create and work with an LSI or Bus logic disk, then it will connect to a corresponding SCSI adapter in a VA. All other stages in the process are similar to what is described for Xen below. Note that virtual disks connected to VA look like /dev/sdc, /dev/sdd because they are connected to a SCSI adapter (emulation).

Before you begin this process confirm that you have access to the following:

- A VC via Virtual Infrastructure Client (VIC).
- The Internet.
- A supported version of ESX Server—ESX 3.5, including Updates 1 and 2; ESXi 3.5, including Updates 1 and 2.
- A supported version of VC—version 2.5, including Updates 1 and 2.

Configure VA to Boot First

You must confirm that the VA disk is placed first in boot priority.

1. Power on the VA.
2. Press **F2** to access the VM BIOS.

   If there is no boot screen delay (where you can press F2 to enter Bios), access Virtual Machine settings. Use **Options→Boot Options** parameter to set an

appropriate boot delay time (Power-on boot delay). Then, you will be able to see the boot screen.

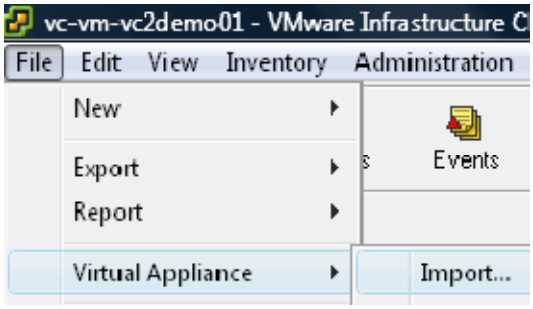
3. Go to the Boot menu and select **Hard Drive.**
4. Using the plus (+) or minus (–) signs, move the Seagate Disk (0:0) to the top of the list. Press **F10—Save and Exit.**

Installing VA on ESX Server

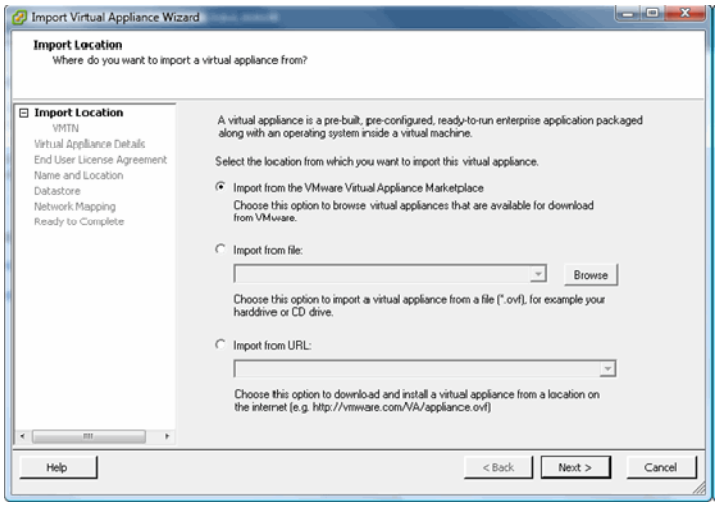
First, you must import the VA from file or from a URL. You can download the VA from the vConverter Add Ons page on the Vizioncore website: *http://www.vizioncore.com/vConverter/addons/.* Once you are on the page, select **VA for VMware ESX Server download link.** Then, save the file.

You have two options for importing VA—from file or from a URL. If you have already downloaded the VA package and know the .ovf file, it is best to import from file. If your VC is connected to the Internet, you can easily import from a URL.

1. Connect to VC.
2. From the VI Client menu, select **File.**

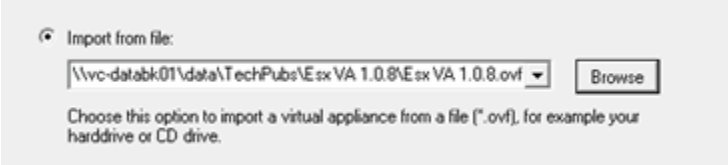


3. Access **File→Virtual Appliance→Import.**



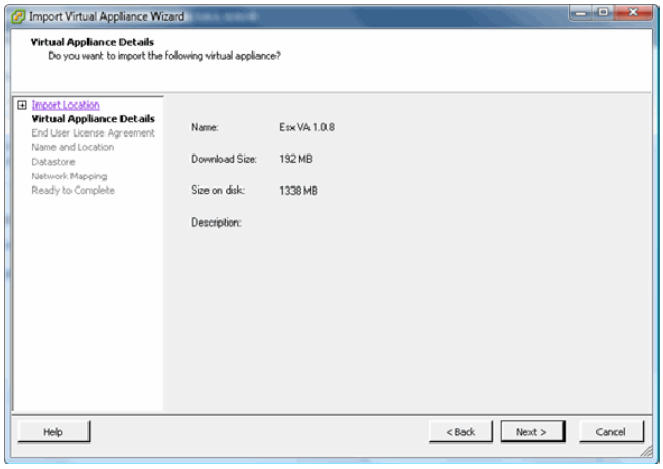
Continue to step 4 to import from file. Skip to step 8 to import from URL. Whether you are importing from file or URL, you will resume the sequence at step 11.

4. In the Import VA Wizard, select **Import from File.**
5. Click **Browse**, and navigate to the location of the VA for ESX files.
   Note: While browsing, you must select the `ESX VA<version>.ovf`.



6. Click **Next.**

   Note: The VA for ESX requires 1.5GB of storage space on the target volume.

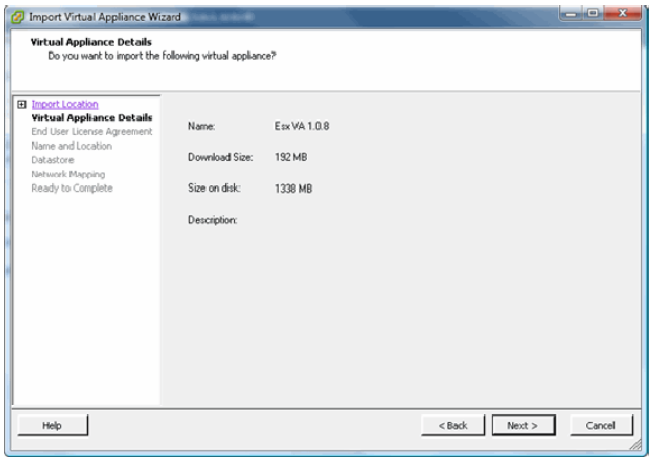


7. On the VA Details dialog, click **Next.** Skip to step 12.

8. To import from URL: On the Import VA Wizard, select **Import from URL.** Enter the URL that points to the .ovf file of the VA for ESX.

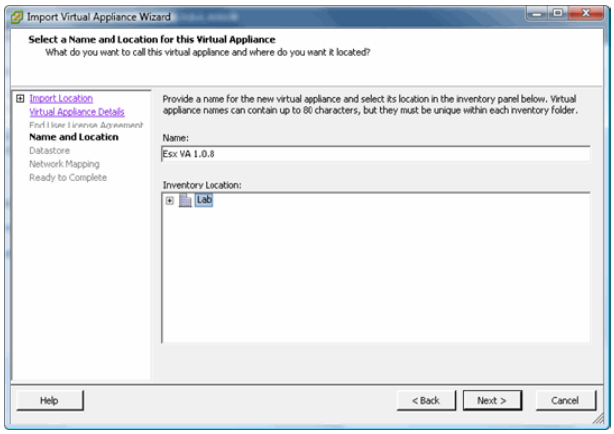
9. Click Next.

   Note: The VA for ESX requires 1.5GB of storage space on the target volume.

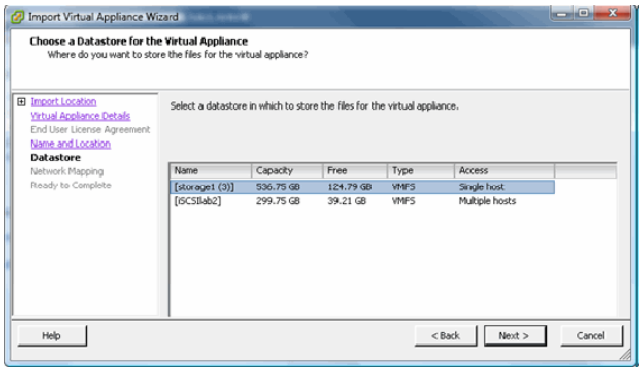


10. Click **Next.**

11. Whether you are importing from file or URL, continue at this step. Select a location for the VA. Click **Next.**

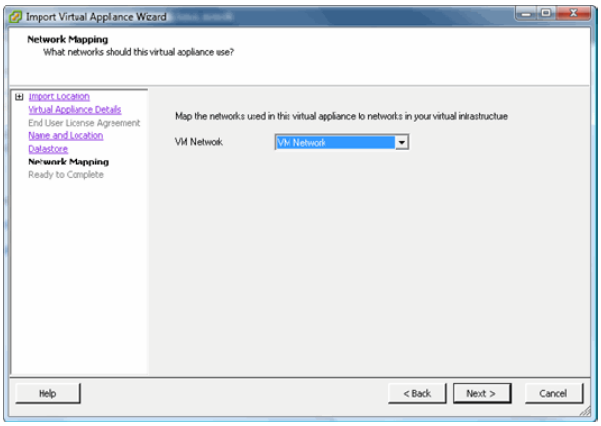


12. Select a storage volume on which to install the VA for ESX.



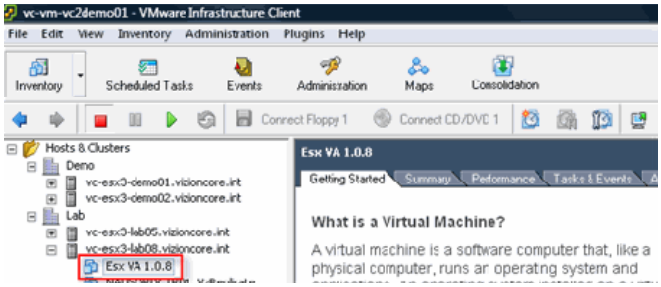
13. Click **Next.**

14. On the Network Mapping dialog, select a network from the dropdown. Click **Next.**

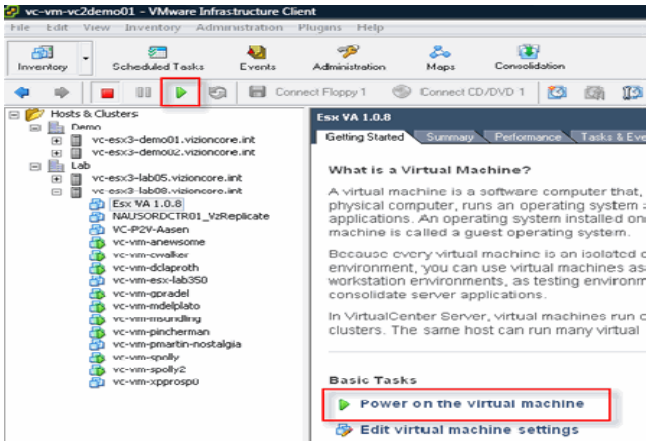


15. On the Ready to Complete dialog, confirm your selections. Click **Next** to import the VA. This process can take several minutes.

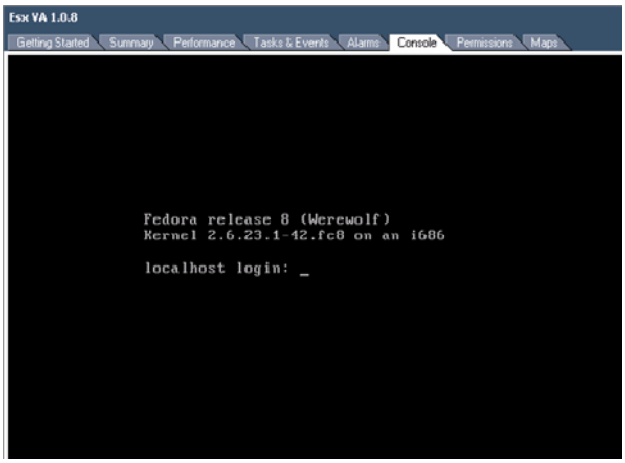
16. In the VIC, locate the VA that you created. Click to highlight it.



17. Power on the VA by clicking the Power On icon  or through the Getting Started tab by clicking **Power on the virtual machine.**

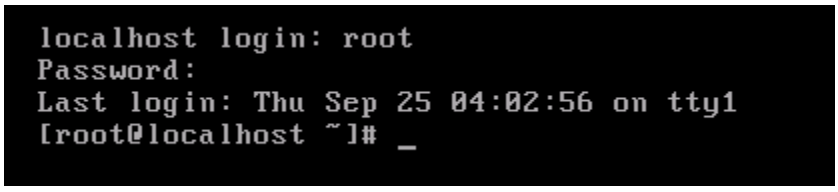


18. Once the machine is powered on, click the **Console** tab of the VIC. To shift keyboard focus to the VA, click anywhere on the console screen. (To retrieve focus, use the Ctrl+Alt keys.)

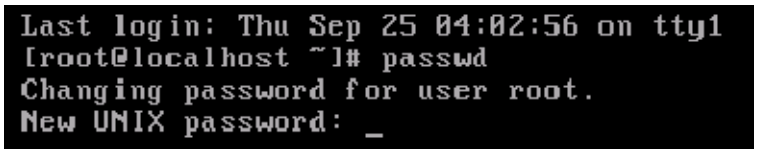


19. At the localhost and Password login prompts, respectively, enter these values:
    Login: root
    Password: root123

    You should see a Last Login time followed by the root prompt:

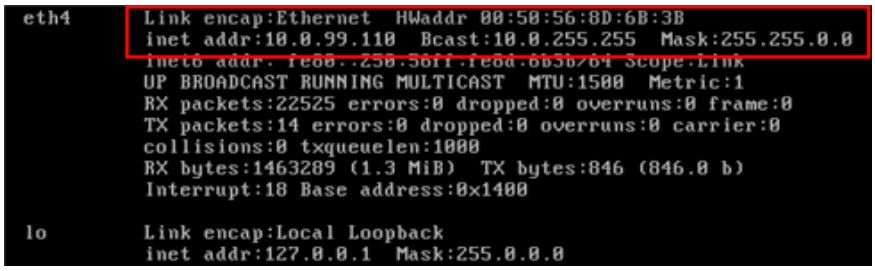


20. To change the root password, enter *passwd* at the root prompt. You will be prompted for a New UNIX password.

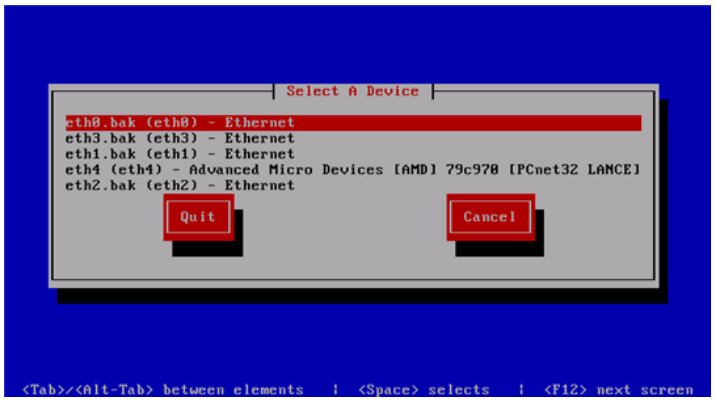


Warning: Because of the importance of the root account, certain limitations exist for root passwords. Use a combination of uppercase and lowercase letters, numbers, punctuation, and other characters. Do not use a word or name. Obscuring the word or name with substitute characters is not effective. Do not use the same password for more than one system. These are examples of good passwords: f9*@1Ls99A and HL8$391%%rb.

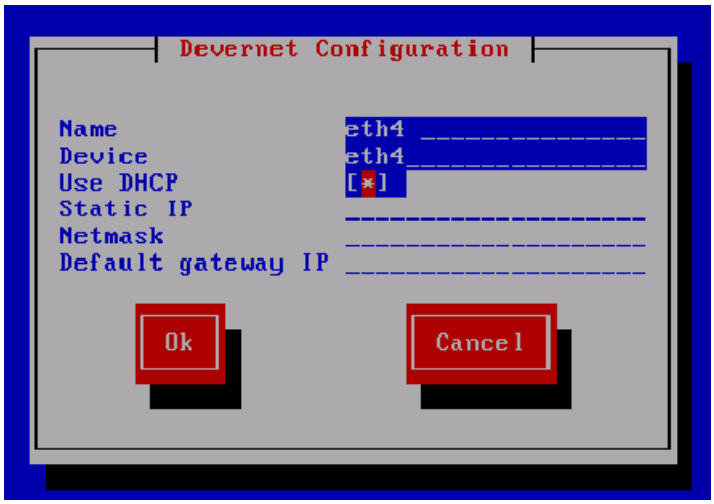
21. The VA for ESX comes configured for DHCP. If you wish to use DHCP, then no configuration is necessary. To view the IP configuration, type ifconfig at the root prompt. The configurations for all configured network links display.



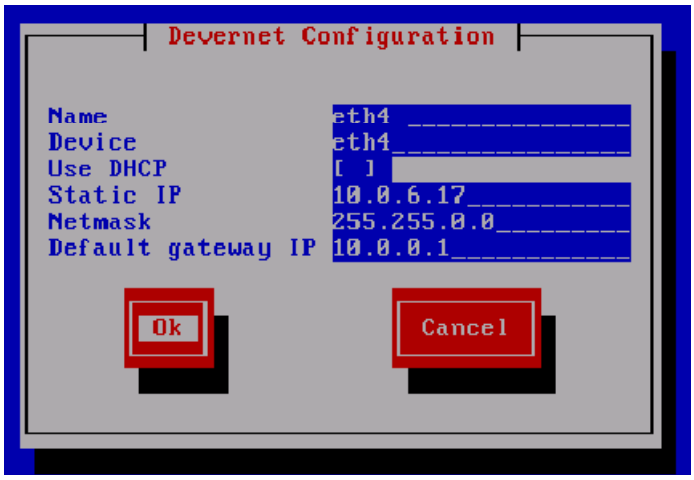
22. Configure a static IP. At the root prompt, enter *`system-config-network-tui.`*



23. On the Network Setup utility, use the arrow keys to navigate to the device. Click **Enter.** On the Devernet Configuration dialog, confirm that *Use DHCP* is selected.



24. Navigate down to Use DHCP. Press the spacebar to deselect it. The Static IP, Netmask, and Default gateway IP options will enable.
25. In the Static IP field, enter an IP address.
26. In the Netmask field, enter the subnet mask for this IP address.
27. In the Default gateway IP field, enter the IP of the default gateway.

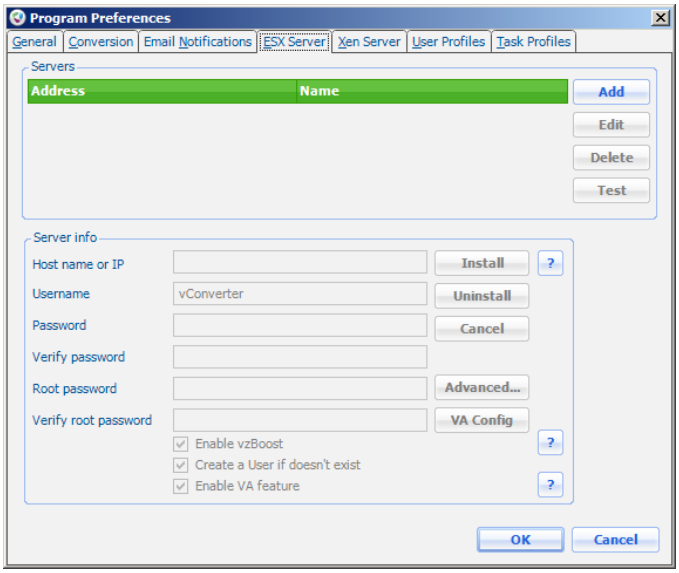


28. Navigate down to OK and click **Enter.**
29. On the Select A Device dialog, use the tab key to select **Quit.** Then, click **Enter.**
30. Restart the VM. The settings will take effect.

Connect vConverter to ESX Server

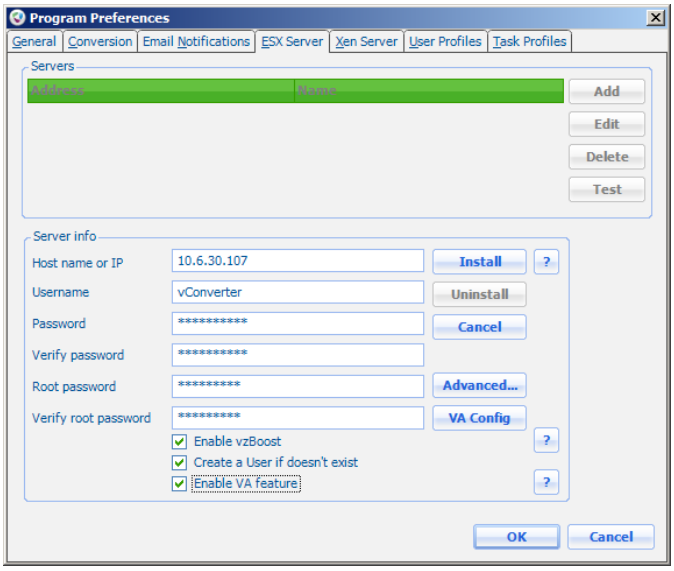
Without proper credentials, conversions will fail. It is critical to test your connections before starting a conversion directly to ESX. Also, confirm that there is a DNS entry in place for the IP address that you intend to use. Otherwise, this message will display at step 8:

1. Select **Tools→Preferences→ESX Server.**

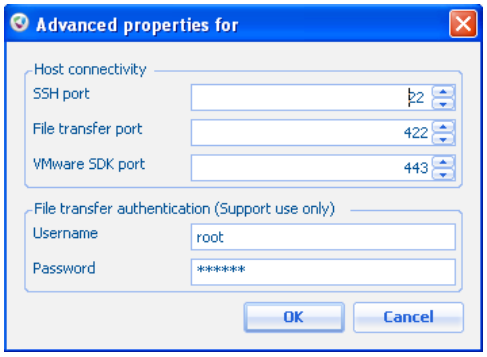


2. Click **Add.**
3. Enter the IP address of the ESX Server.
4. With non-root credentials, populate the Password and Verify password fields. By default, vConverter populates the Username field.
5. Populate the Root password and Verify root password fields.

   Note: VMware does not allow remote root connections.
6. Select the **Enable VA feature** checkbox. The Enable vzBoost and Create a User if doesn't exist checkboxes are selected by default.



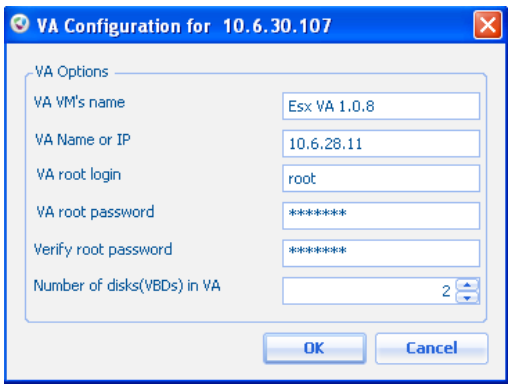
7. Click **Advanced.** Make any necessary changes on the Advanced properties dialog and click **OK.**



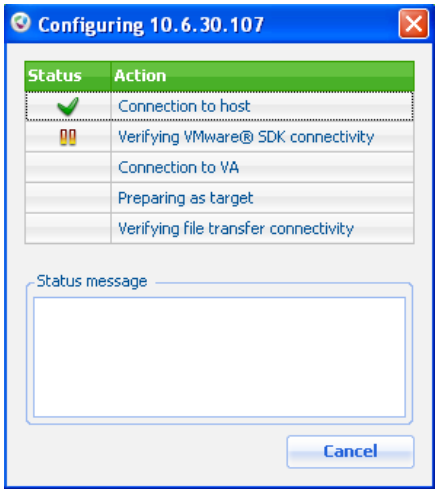
Note: These settings should only be changed if the port numbers are incorrect for your network. If this is the case, vConverter will not be able to communicate with the ESX Server.

8. To configure vConverter to use VA to write to the ESX Server, click **VA Config.**

9. Populate the fields on the VA Configuration dialog and click **OK.**

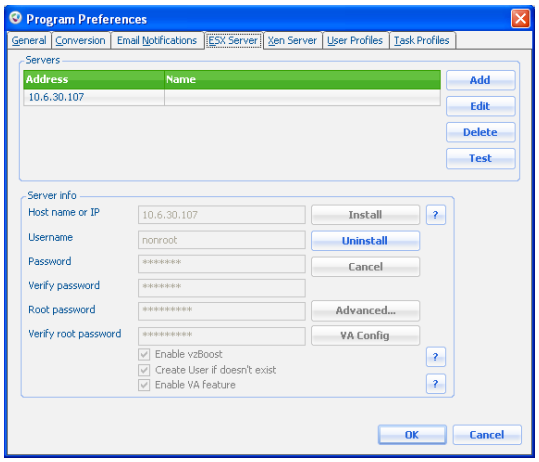


10. On the ESX Server tab, click **Install.**
    vConverter will attempt to configure your server. The status message will indicate if configuration was successful.

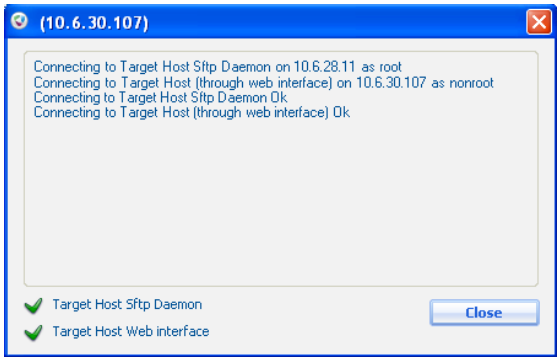


    Note: If the configuration was unsuccessful, verify the username, password, and port numbers listed on the Advanced properties dialog.

11. On the Configuring dialog, click **Close.**
    The server address is listed in the Servers area of the ESX Server tab.



12. Click **Test** to confirm the connection.



13. If the test is successful, close the window and click **OK** on the Program Preferences dialog. You can begin your first conversion.

vConverter and Xen VA

- vConverter prepares an SFTP agent in a VA, confirms that it is running, and accepts all connections. This can be done through Preferences→Xen Server.
- After you have selected source and destination hosts and set all options, click Start to initiate capturing.
- vConverter selects partitions to capture one-by-one and starts DCT on a Source host.
- DCT creates a new virtual disk on XenServer (VDI) with the correct size and plugs it to a VA (under /dev/xvdc,/dev/xvdd,… names). It uses the SFTP agent to write to that block device and performs other related operations (e.g., resize, truncate) with it.
- When DCT exits vConverter, all virtual disks involved in the capturing process are unplugged.
- On the migrating stage, vConverter plugs all disks into a VA and mounts them to a host where it runs.
- When migration is compete, all disks are unmounted from the Windows host, and then unplugged from VA.

Configure VA to Boot First

You must confirm that the VA disk is placed first in boot priority.

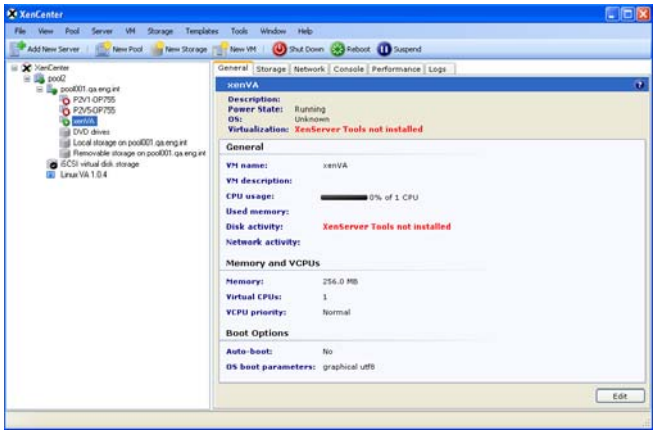
1. Power on the VA.
2. Press **F2** to access the VM BIOS.

   If there is no boot screen delay (where you can press F2 to enter Bios), access Virtual Machine settings. Use Options→Boot Options parameter to set an appropriate boot delay time (Power-on boot delay).
   Then, you will be able to see the boot screen.
3. Go to the Boot menu and select **Hard Drive.**
4. Using the plus (+) or minus (–) signs, move the Seagate Disk (0:0) to the top of the list. Press **F10—Save and Exit.**

Installing VA on XenServer

1. Obtain a VA package and unpack it into any directory. It should contain at least one *.xva file.
2. Run the XenCenter Management utility and verify free space in any Xen storage repositories. You will need approximately 1.2GB.
3. Access **Templates→Import Template** and select **Exported template.**
4. Click **Browse** and select the Xen VA file (*.xva).
5. After import completes, confirm that the new template displays on the XenServer.
6. Create a VM using the template by selecting **VM→New.**

   Notes: You will not need more than 256MB RAM. Except for the VM name, it is best to use the default parameters. This process can take several minutes.



7. Start the VA VM by entering these credentials:
   Login: root
   Password: xen123
8. Obtain the VM's IP address.

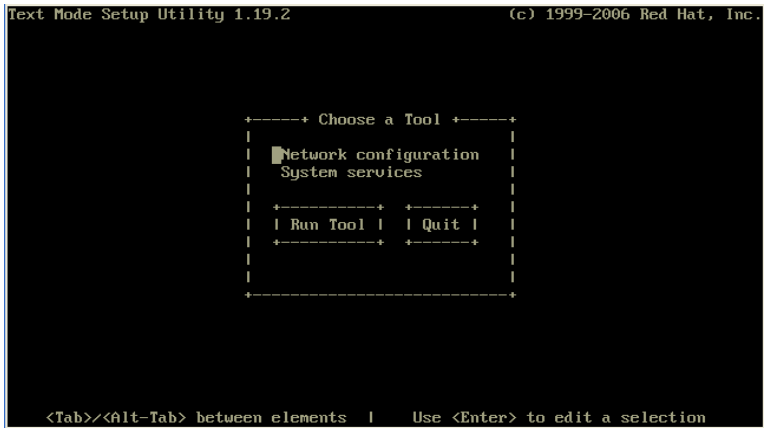
   Warning: To ensure that the VA works correctly, set it to the correct physical network. Edit the VA settings to include the correct virtual switch/network from within XenCenter. Click the VM's Network tab and click Edit.

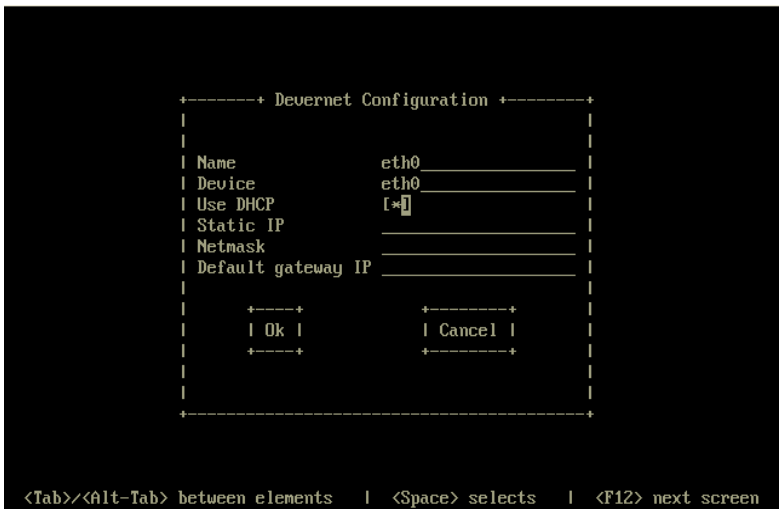
   -If there is a DHCP server in the network, then the VA already has an automatically assigned IP address. To get it running, use the *ifconfig eth0* command; locate an IP address after *inet addr.*

   -If the IP addresses in the network are assigned statically, then assign an address to VA manually. To do this, run the setup command in the console window. The setup utility uses <Tab> and <Enter> keys to navigate in menus and <Space> for changing values. Enter static IP, mask, and default gateway values for the VA.

9. After the network address is configured, enter `service network restart` to instantiate it.

   At the end of this process, you will have the following:
   -VA name on Xen
   -VA IP address
   -Login credentials (root/xen123)
   -Two virtual disks that VA uses

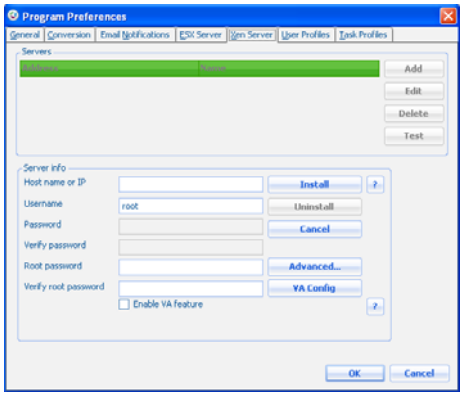



Devernet Configuration
Name eth0
Device eth0
Use DHCP [*]
Static IP
Netmask
Default gateway IP
Ok
Cancel
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

Connect vConverter to XenServer

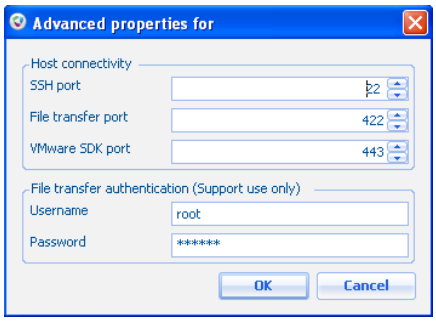
In the first part of this process, you configure vConverter to connect to XenServer. In the second part, you configure VA to help vConverter write to the Xen host. It is critical that you test your connection before beginning a conversion to XenServer. Without proper credentials, conversions will fail.

1. Select **Tools→Preferences→Xen Server.**



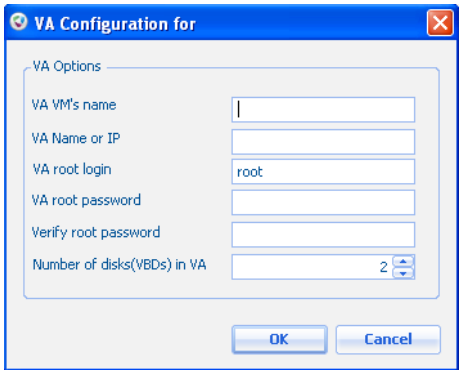
2. Click **Add.**
3. Enter the IP address of the XenServer.
4. With non-root credentials, populate the Root password and Verify root password fields. By default, vConverter populates the Username field.

   Note: VMware does not allow remote root connections.
5. Select the **Enable VA feature** checkbox.
6. Click **Advanced.** Make any necessary changes on the Advanced properties dialog and click **OK.**

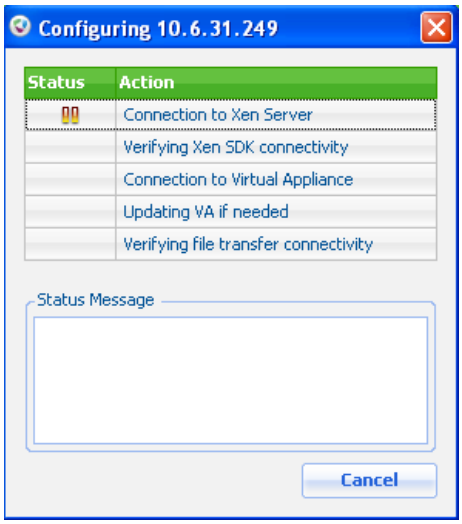


   Note: These settings should only be changed if the port numbers are incorrect for your network. If this is the case, vConverter will not be able to communicate with the Xen Server.

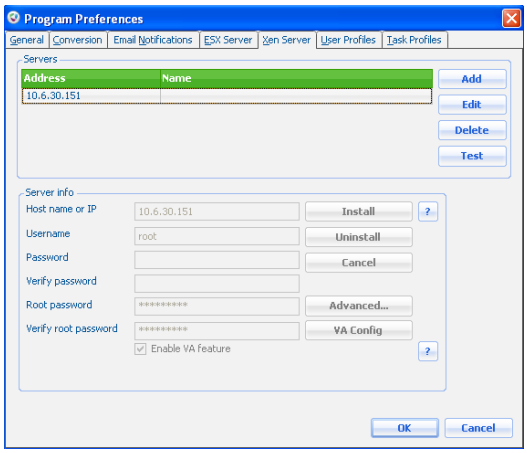
7. To configure vConverter to use VA to write to the XenServer, click **VA Config.**



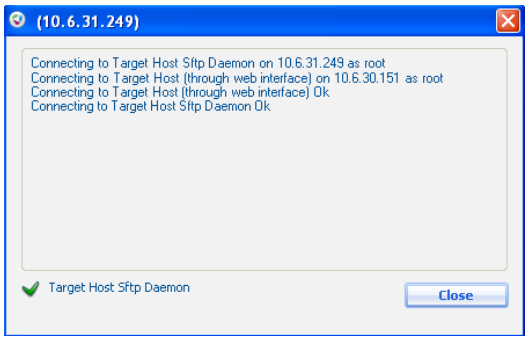
8. Populate the fields on the VA Configuration dialog and click **OK.**
9. On the Xen Server tab, click **Install.**
   vConverter will attempt to configure your server. The status message will indicate if configuration was successful.



   Note: If the configuration was unsuccessful, verify the username, password, and port numbers listed on the Advanced properties dialog.
10. On the Configuring dialog, click **Close.**
    The server address is listed in the Servers area of the Xen Server tab.



11. Click **Test** to confirm the connection.



12. If the test is successful, close the window and click **OK** on the Program Preferences dialog. You can begin the first conversion.

Convert Using TSA

TSA is an application that serves these types of incoming requests:

- Create new disk image.
- Resize (both shrink and expand) existing disk image.
- Write new data to the disk image at specified offset.
- Read data from the disk image at specified offset.

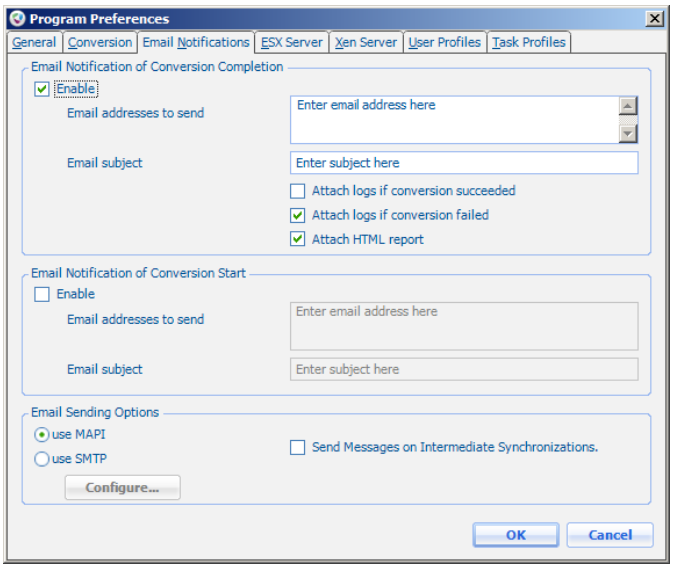
TSA is run by xinetd daemon when a new incoming request arrives to TCP port. Then, if necessary, it calls the vmkfstools utility for doing operations with disk images—creating disk images and resizing. TSA uses SFTP protocol to exchange the disk data with the remote program—DCT or VDD.

Configure Email Notification

You can configure vConverter to send email alerts when conversion jobs have started, succeeded, and failed. In addition, you can request that notifications are sent during intermediate synchronizations.

1. Select **Tools→Preferences.**
2. Click the **Email Notifications** tab.
3. To be alerted when a conversion job completes, select **Enable** in the Email Notification of Conversion Completion area.

   -Enter the email addresses of those you want to notify.
   -Populate the Email subject field.
   -Select the checkboxes to request that logs and/or HTML reports be attached to the emails in the event of conversion success or failure.

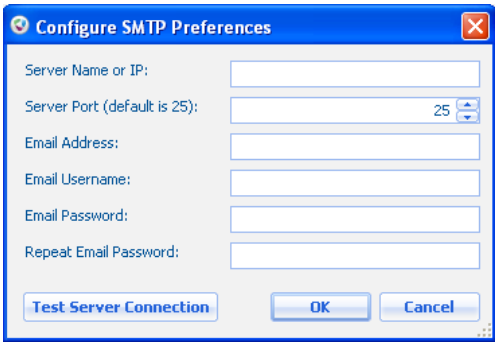


4. To be alerted when a conversion job completes, select **Enable** in the Email Notification of Conversion Start field.

   -Enter the email addresses of those you want to notify.
   -Populate the Email subject field.

5. In the Email Sending Options area, select a radio button—**use MAPI** or **use SMTP.**

   If you select the latter, the Configure button will be enabled.
   -Click it to access the Configure SMTP Preferences dialog.
   -Populate the fields on the dialog and click **OK.**
   -To test the server connection you just configured, click **Test Server Connection.**
   -Then, click **OK.**

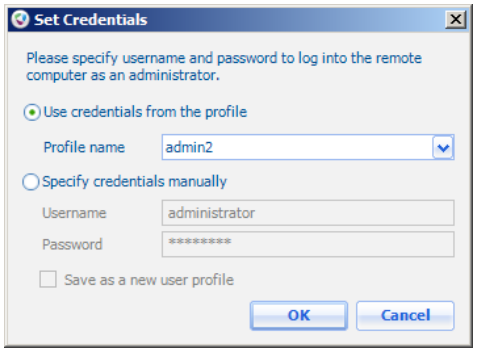


6. Select the **Send Messages on Intermediate Synchronizations** checkbox if you want to receive status notifications between the start and end of a conversion job. Click **OK.**

Change Login Credentials

You can change the login for the source server manually or by using an existing profile. You can save a user profile on the Set Credentials dialog to make this login information available for future use.

1. Navigate to the **All Systems** tab on the Network Browser pane.
2. Click to highlight the server for which you want to change the login credentials.
3. Right-click to select **Change login.**
   The Set Credentials dialog displays.



4. Select a radio button—**Use credentials from the profile** or **Specify credentials manually.**

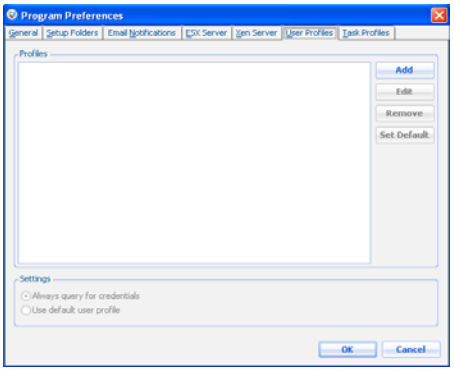
   Note: The appropriate fields will be enabled based on the selection that you make.
5. If you are changing the login using a profile, make a selection from the Profile name dropdown.

   If you are completing the process manually, populate the Username field and then enter a password. To retain the profile for future use, select the **Save as a new user profile** checkbox.

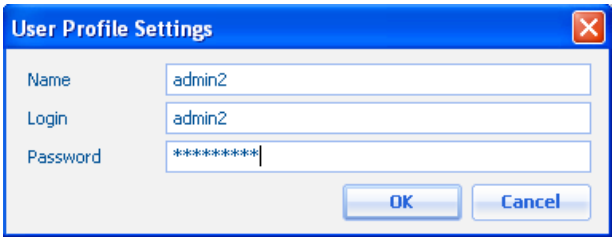
6. Click **OK.**

Add User Profile

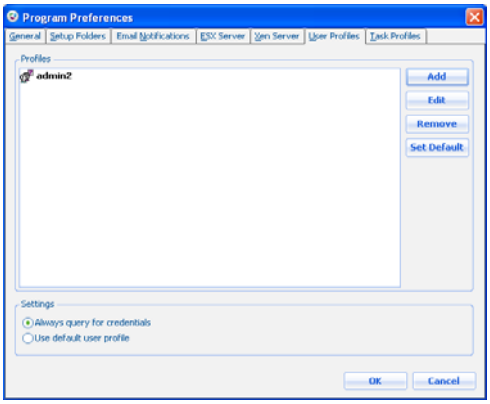
1. Select **Tools→Preferences.**
2. Click the **User Profiles** tab.



3. Click **Add.**
4. On the User Profile Settings dialog, populate the Name, Login, and Password fields. Click **OK.**



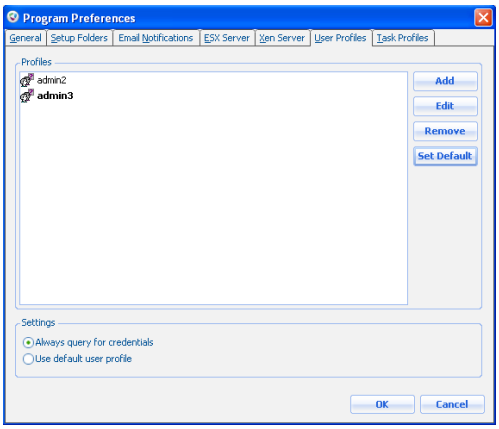
The user profile is added.



5. If you would like the system to prompt for a login always, leave the **Always query for credentials** radio button selected and click **OK.**

Set User Default

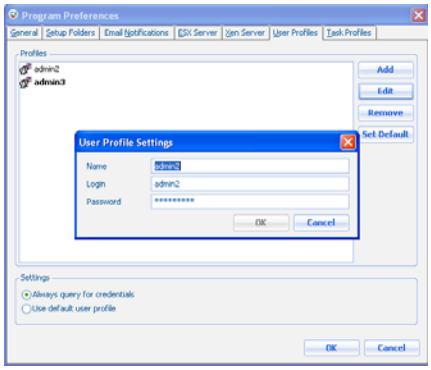
1. Select **Tools→Preferences.**
2. Click the **User Profiles** tab.
3. Click to highlight the user profile that you want to set as the default. Click **Set Default.**
   The profile that you set as the default displays in boldface.



4. Select the **Use default user profile** radio button. Click **OK.**

Edit User Profile

1. Select **Tools→Preferences.**
2. Click the **User Profiles** tab.
3. Click to highlight the user profile that you want to edit. Click **Edit.**

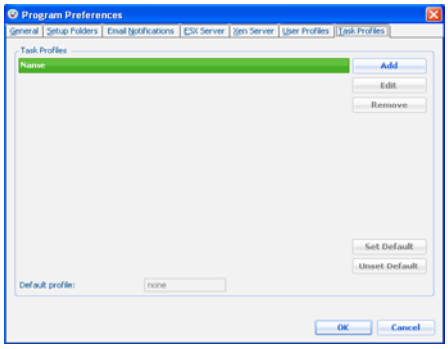


4. On the User Profile Settings dialog, make the updates. Click **OK.**

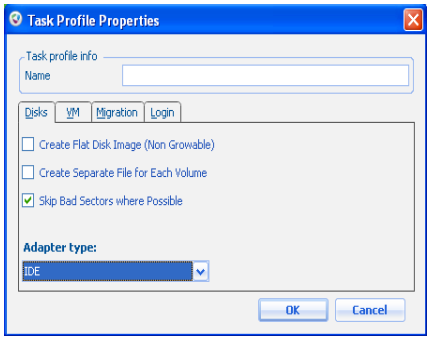
Add Task Profile

The tabs of the Task Profile Properties dialog are almost identical to those of the Advanced Properties dialog, except that the former does not include properties specific to source systems.

1. Select **Tools→Preferences.**
2. Click the **Task Profiles** tab.

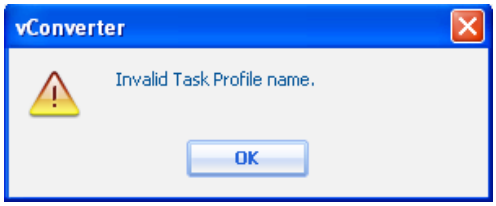


3. Click **Add.**

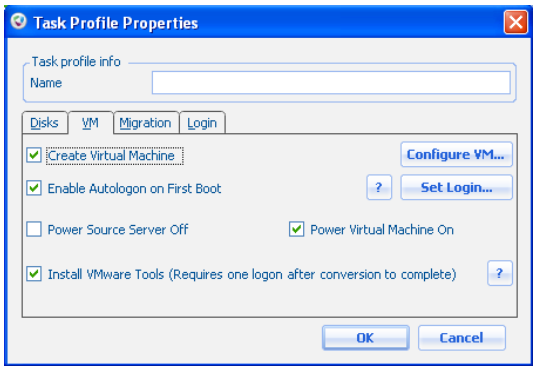


4. On the Task Profile Properties dialog, populate the Name field in the Task profile info area.

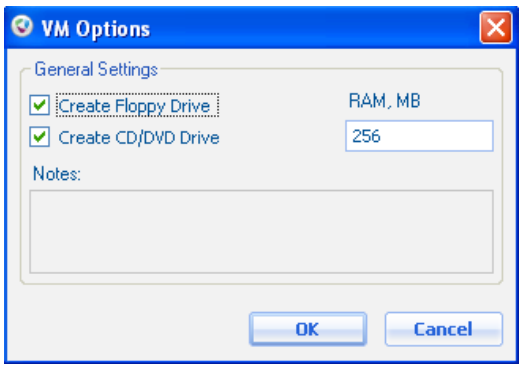
   Note: If you do not populate this field, an error message will display later in this process.



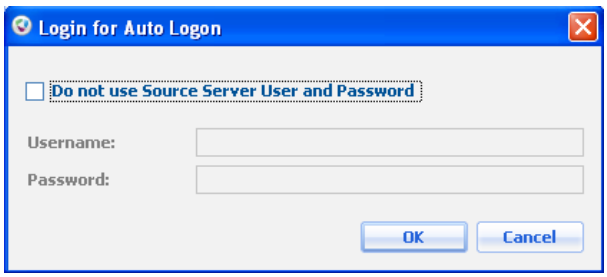
5. On the Disks tab, configure the task.
6. Click the **VM** tab. Configure the task.



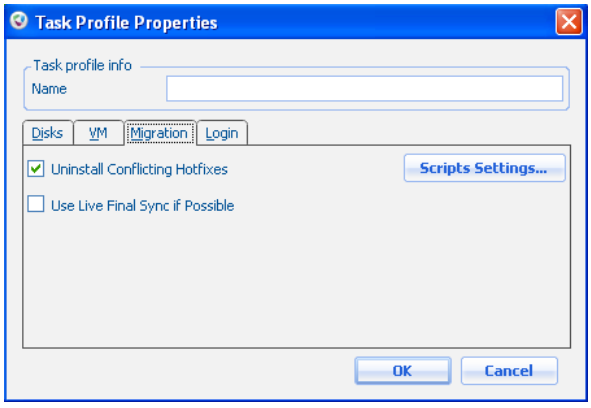
   To configure a VM, click **Configure VM.** Populate the fields on the VM Options dialog and click **OK.**



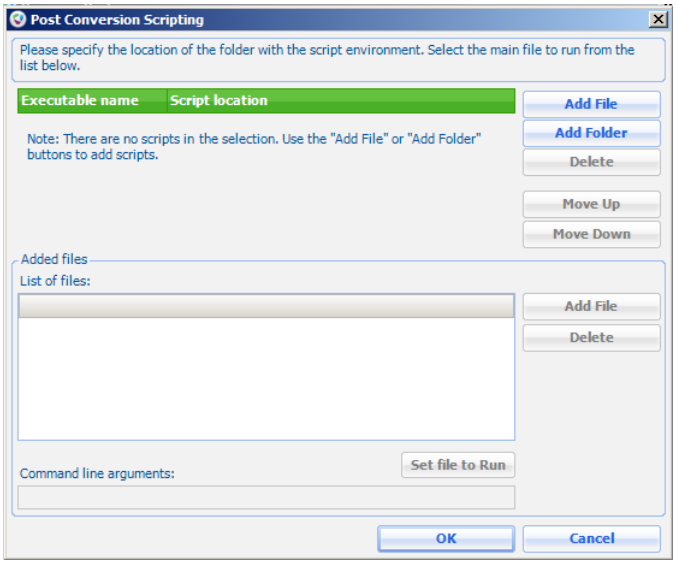
To set a login, click **Set Login.** Populate the fields on the Login for Auto Logon dialog and click **OK.**



7. Click the **Migration** tab. Configure the task.



Click **Script Settings.** Make any file or folder configurations and click **OK.**

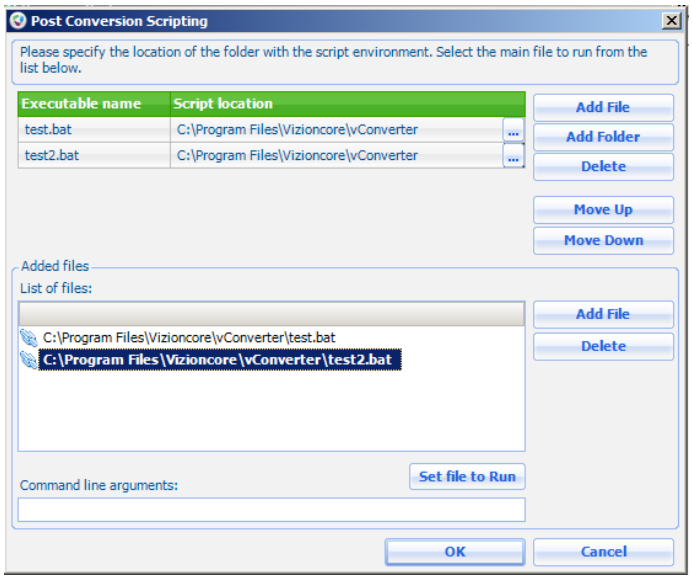


8. Click **Add File** to locate a file to add.

   OR

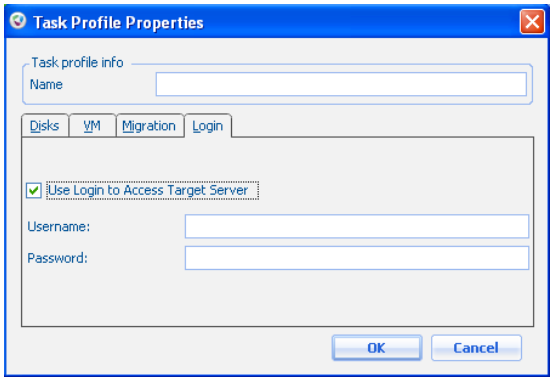
9. Click **Add Folder** to browse for a folder that contains the script that you want to add. If the selected folder contains more than one executable file, you will be prompted to select the correct file from the List of files.

   After you add a file to the executables list, the Add File button in the Added files section is enabled. You can now add it as a dependent file.

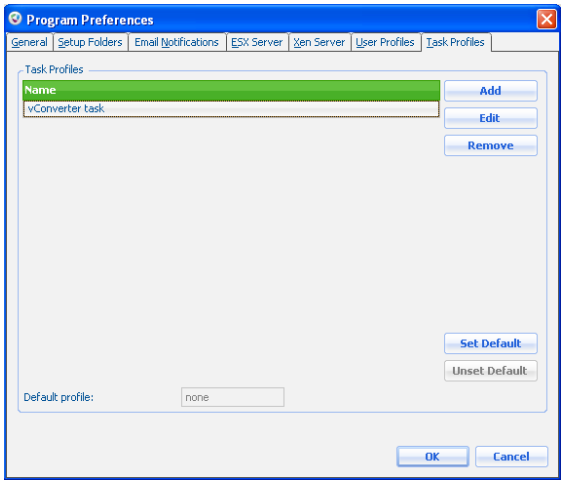


   Once you download an executable, the **Set file to Run** button will activate. Click it and then click **OK.**

10. Click the **Login** tab. Configure the task.

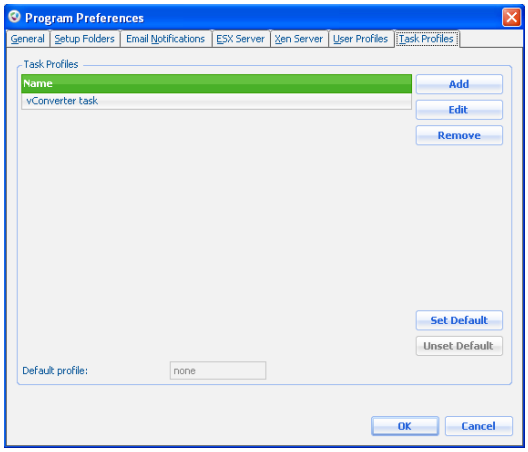


11. Click **OK** to save all changes.
    The task is available on the Task Profiles tab.

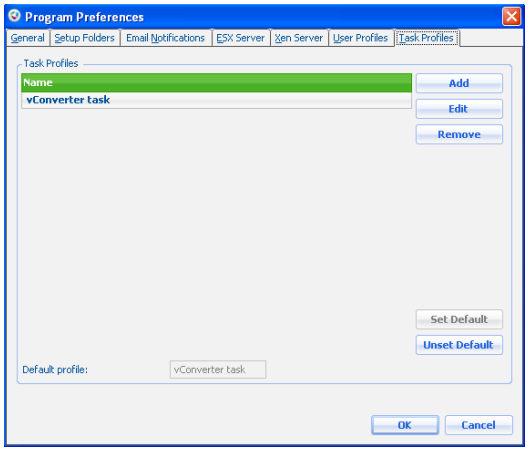


Set Task Default

1. Select **Tools→Preferences.**
2. Click the **Task Profiles** tab.



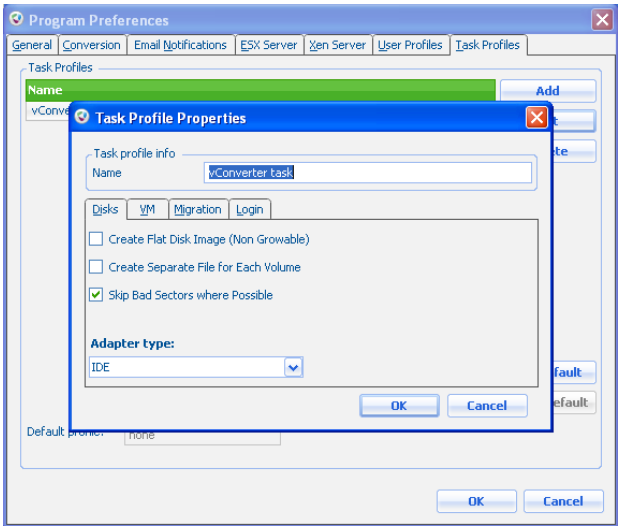
3. Click to select the task profile that you want to set as the default. Click **Set Default.**
   The profile that you selected displays in boldface in the Task Profiles section. It also displays in the Default profile field.



4. Click **OK.**

Edit Task Profile

1. Select **Tools→Preferences.**
2. Click the **Task Profiles** tab.
3. Click to highlight the task profile that you want to edit. Click **Edit.**



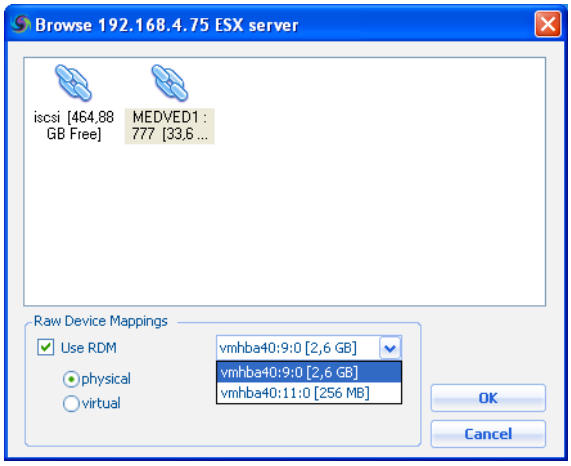
4. On the tabs of the Task Profile Properties dialog, make the updates. Click **OK.**
5. On the Program Preferences dialog, click **OK.**

Use P2V to RDM

Before you begin this process, confirm that the devices are available on the target and that they are not being used by another VM. This feature is not accessible if an RDM is not available.

1. In the Conversion Tasks pane, click **Browse.**
2. Click to select a location where the mapping file can be stored. Then, select **Use RDM.**
3. Select a radio button—**physical** or **virtual.**

   Note: Physical mode allows the VM to access the device directly. Virtual allows you to enjoy the benefits of the .VMDK file (such as snapshots) on the mapped device.
4. From the dropdown, select a device. Click **OK.**



Configure Source Servers for RPC

Source servers must be configured to allow RPC calls.

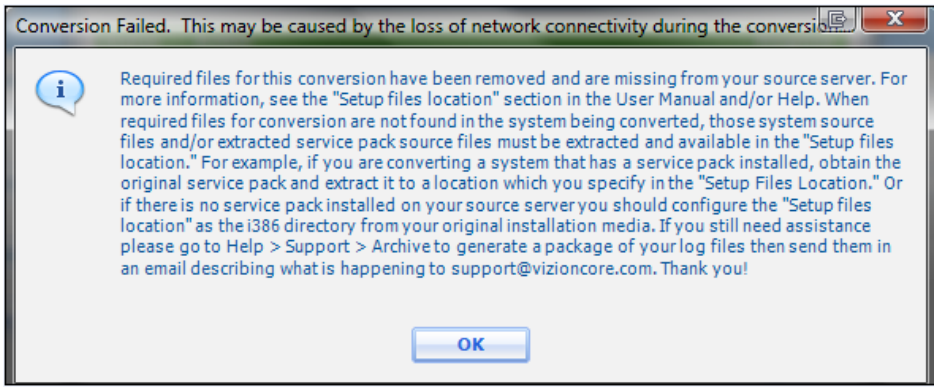
1. Add this key below to the registry of the source server:
   HKEY_LOCAL_MACHINE\Software\Microsoft\Rpc\Internet
2. Add these parameters to it:
   -Ports (REG_MULTI_SZ). Specify a range of ports used for RPC connections (e.g., 5000-5100).
3. Add these ports to the firewall exception list:
   PortsInternetAvailable (REG SZ). Value: Y
   UseInternetPorts (REG SZ). Value: Y
4. Add this port to your firewall exception list:
   Enable port 135

Using a Setup File Location

To convert a Windows system vConverter requires access to certain files from the Windows installation. In most cases, you will find these files in one of these locations:

- %windir%\Driver Cache
- %windir%\ServicePackFiles

Occasionally, an administrator will have to remove the files from these locations manually or programmatically by running the *SFC /PURGECACHE* command. If this becomes necessary, a message displays.

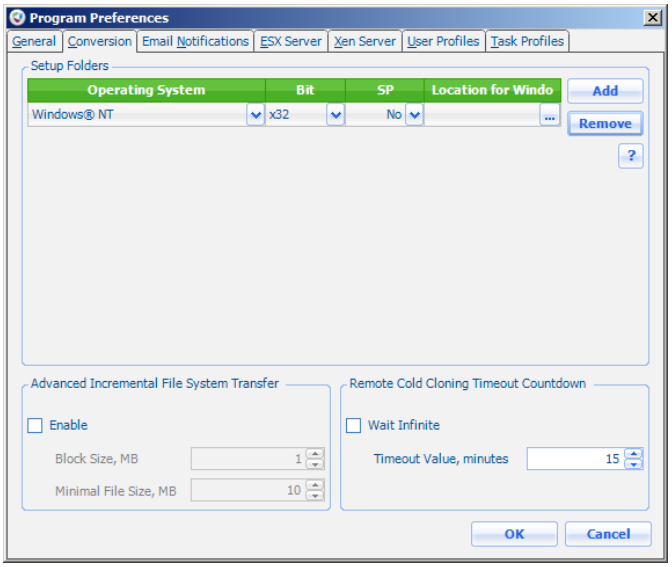


When system files required for conversion are not found in the system being converted, those files and service pack source files must be extracted and made available in the setup file location.

If you are converting a system that has a service pack installed, obtain the original service pack and extract it to a location that you specify in the setup file location. If there is no service pack installed on your source server, configure the Setup File Location as the i386 directory from your original installation media.

If these files are not found, vConverter will not be able to complete a conversion if it is the first of this OS type. If this OS type has been converted previously, the files have been cached and vConverter will not need to capture them from the source. There are two workaround options that will allow you to continue.

1. Access Setup Files Location through **Tools→Preferences→Conversion.**



2. To use the Setup Files Location feature, do one of the following:

- Insert the %windir%\Driver Cache from another server, which is accessible from the workstation where vConverter is running (e.g., \\server\c$\windows\Driver Cache\i386)

  OR

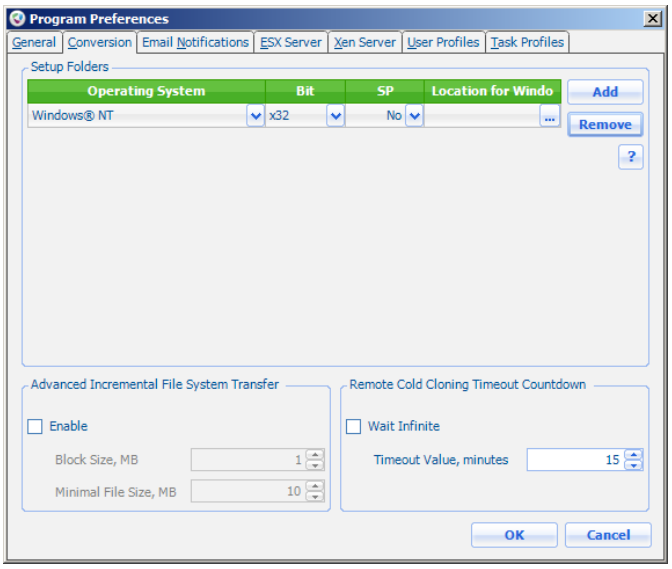
- Enter the location where the files are extracted and located centrally.

Note: vConverter Cache contains the files required to convert a system. If you want to convert a Windows 2000 Server SP4 but the required files are missing, vConverter will use the files from the cache, which is located at C:\Documents and Settings\<profile>\Local Settings\Application Data\Vizioncore\vConverter\Cache.

Prepare Setup Folder for Windows NT SP6a

To prevent unwanted conversion failures due to missing setup folder files, you can provide a location for all setup folders using the Program Preferences dialog. To prepare for converting Windows XP SP2:

- Add a new record into this grid.
- Specify OS and SP.
- Then, point to location of the raw SP2 files, or installation of Windows XP with applied SP2 (\i386 folder).



Note: You must complete this sequence to prepare a setup folder for Windows NT SP6a.

1. Download the NT4SP6a SP from the Microsoft website.
2. On any Windows system, run the executable.
3. When you are prompted for a folder to extract files, select or create one and continue the installation process.

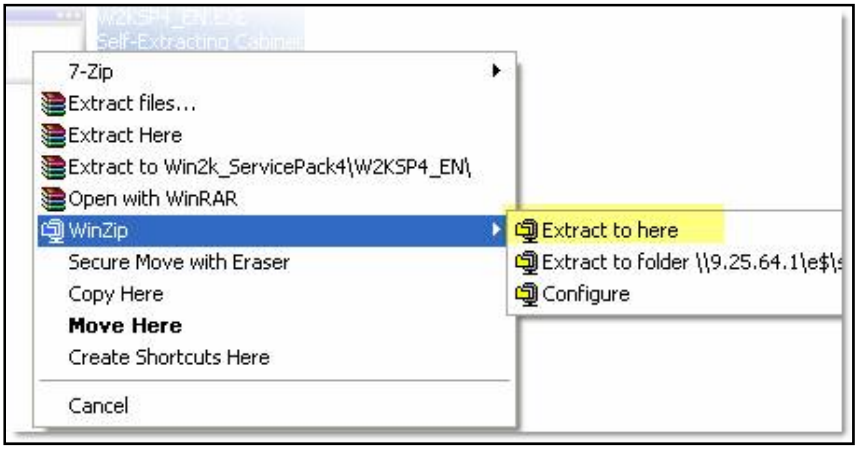
   Warning: If an error displays, do not close the form.
4. Go to folder with the extracted files and copy all files to a new location. Now, you can use this location for the setup folder.
5. Target disk adapters for NT4 can be SCSI or IDE.
   - You do not need to confirm anything to migrate to IDE.
   - If you migrate to SCSI, you will need a buslogic.sys driver, which is in the distribution of NT4; not in the SP. Manually copy the driver from NT4 distribution to the setup folder or copy the setup folder to the distribution location.

SPs and OS Source Files

Successful conversions require OS source files and extracted SP source files. If you are converting a base installation of any Windows OS, vConverter will require access to the server source files (e.g., installation CD or files from the CD on an accessible share).

If you are converting a Windows OS that contains an SP, vConverter will require access to the extracted SP source files but not the base OS source files (e.g., CD or files from the SP extracted onto an accessible share). If you are converting a large number of servers

you should extract SP files onto a file server for easy access. First, download the SPs for Windows XP, Windows 2000, and Windows 2003. Then, extract them to a folder that you can locate easily using the Conversion tab.



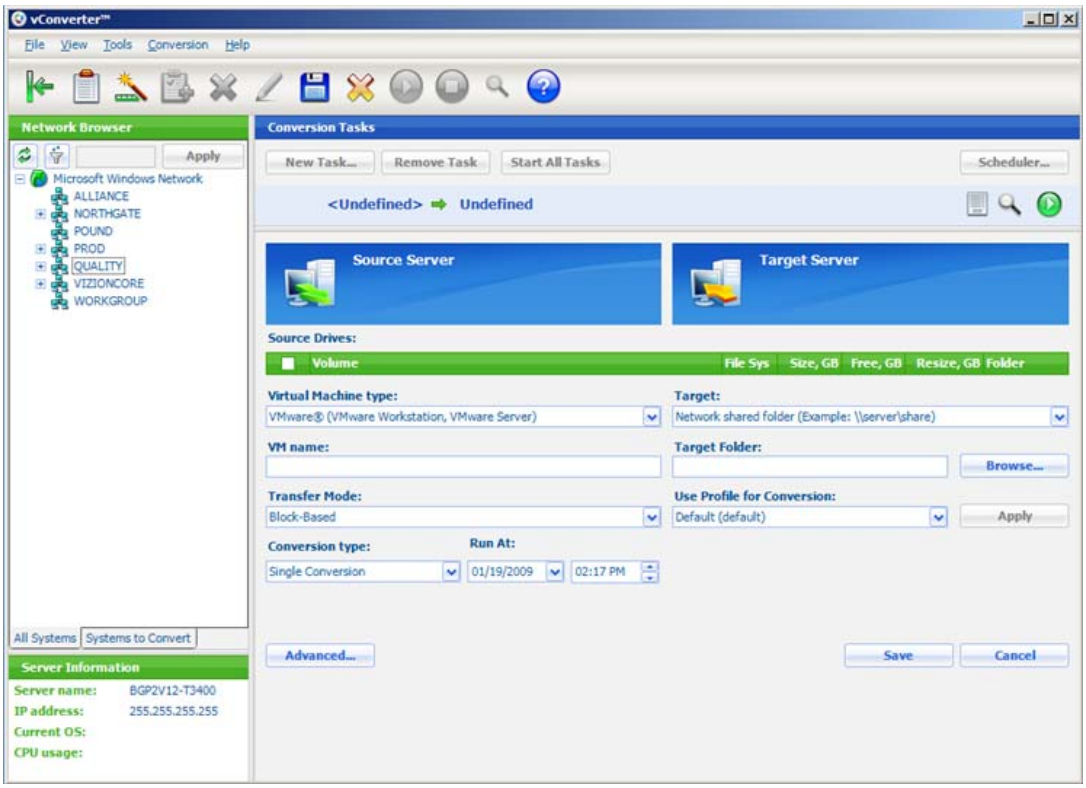
4 Using vConverter

vConverter User Interface

The vConverter window is the central navigational area of the software. This is where you can view the main components of the system. Through this window you can access the commands that allow you to configure and execute conversion jobs.

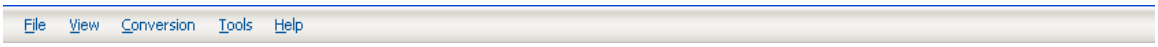
Now that the software is installed, launch it through its desktop icon or the Start menu. The vConverter window features these areas:

- Menu Bar
- Toolbar
- Network Browser Pane
- Conversion Tasks Pane
- Server Information Area



Menu Bar

The Menu Bar contains the following options:



File Menu

Export settings	Displays the Save as dialog from which you can export the settings that you defined through Tools→Preferences. This command allows you to maintain the same preferences on multiple systems and instances of vConverter.
Import settings	Displays the Open dialog through which you can import the settings that you configured previously. This command allows you to maintain the same preferences on multiple systems and instances of the software.
Exit	Closes the vConverter window and exits the software.

View Menu

Show/Hide Network Browser	Toggles off and on to display or hide the Network Browser pane.

Tools Menu

Preferences	Opens the Program Preferences dialog, which you can use to define preferences that are all saved permanently in: <user profile location>\ Local Settings\Application Data\Vizioncore\vConverter\Settings These settings can be imported or exported for use in other systems. Features these tabs: **General**—Define network settings, naming conventions, PXE service availability, and quick tip display. **Conversion**—Create setup folders with kernel and driver files. Prevent conversion job failures that result from missing setup folders. Enable advanced incremental file system transfer based on block and file size. **Email Notifications**—Select a notification method: Messaging Application Programming Interface (MAPI) or Simple Mail Transfer Protocol (SMTP). Enable or disable notification at start/finish of conversion jobs. Trigger email notifications for intermediate synchronization status. Enter email addresses to configure notification. **ESX Server**—Lists all ESX Servers that have been added to the

	system. Test connectivity and verify credentials. Enable vzBoost and VA. Create a user profile for future use. **Xen Server**—Lists all XenServers that have been added to the system. Test connectivity and verify credentials. Enable VA. **User Profiles**—Allows you to enter credentials for individual source servers. Specify whether you want to use a default profile or have the system prompt for credentials. **Task Profiles**—List all task profiles for conversion jobs. Not tied to a particular source or target; task profile property tabs contain only general settings that are not based on server type. For additional information on the settings on this dialog, see the Program Preferences Dialog section later in this chapter.

Conversion Menu

Conversion Wizard	Opens the Conversion Wizard dialog, which you can use to configure a conversion job.

Help Menu

Activation→Activation Wizard	Opens the Activation Wizard dialog, which you can use to activate a vConverter license. You can complete activation online, through email, or by using the supplemental upstream method after initial activation.
Help	Opens online help, which includes general information about vConverter as well as instructions on how to configure the software, create and run conversion jobs, and so forth.
User Manual	Opens the PDF version of the vConverter User Manual that is packaged with the application.
Support	Opens the vConverter Technical Support Assistance window from which you can send support requests and capture log files.
Clear Logs	Deletes all application logs. *Caution:* Deleted logs will not be available for Support. Use this feature selectively.
About	Displays information about vConverter, including: • software version • name of the user to whom the software is registered • serial number • number of conversions remaining • license expiration date

Toolbar

The Toolbar of the vConverter window features these icons:

	Hide/Show Network Browser View
	Open Preferences
	Run Conversion Wizard
	Create New Task
	Remove Task
	Edit Task
	Save Task
	Cancel Task Editing
	Start Task
	Stop Task
	Open Conversion Monitor
	Open the About Window

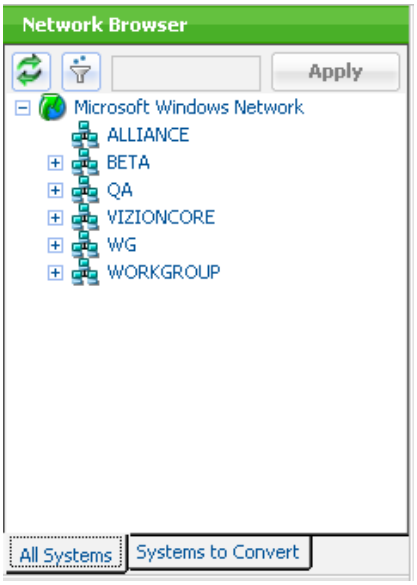
Network Browser Pane

The Network Browser pane displays the domains and workgroups that include all servers available for conversion. This pane features two views—All Systems and Systems to Convert.

All Systems View

The All Systems view displays a tree containing all of the network domains and systems available. From this view, you can copy a server to Systems to Convert so that you can use it as a source or target. When vConverter first starts, all network objects undergo background scanning. There is a limited number of scan threads (20). Each top level

domain runs its own thread. In addition to a domain/workgroup tree, the All Systems view contains two icons—Filter on and Refresh. When you right-click any object in the tree, a shortcut menu displays. These icons and commands are available:



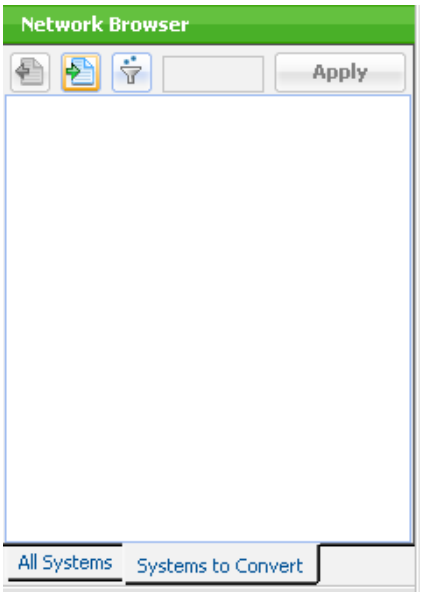
	Refresh
	Filter On

Refresh	Refreshes the tree in the All Systems view of the Network Browser pane and launches scanning of a specified domain.
Change Login	Opens the Set Credentials dialog, where you can define the credentials for a source. You can create an administrator profile for each source, store the data, and then select it for reuse. Note: Select the Save as a new user profile checkbox to retain the credentials that you enter on the Set Credentials dialog.
Add to Systems to Convert	Automatically copies the selected server to the Systems to Convert view. From there, you can select any server as source or target.
Create Conversion Task	When you right-click a server and select this command, you will be prompted to save the task that you are about to define. Then, the system will confirm sufficient free space on the target and prompt you to select disk volumes. After you configure the task, you can run the conversion job. Note: If you have not configured the default task profile through the Program Preferences dialog, an error message to this effect will

	display when you select this command.
Add to Source	When you right-click a server and select this command, the server name will be copied to the VM name field on the Conversion Tasks pane and will be available as a target. This command is available only for new blank tasks after you click the editing icon in the Conversion Tasks pane. Add to Source is not available for existing tasks—in this case, the command either displays disabled or it will not display at all.

Systems to Convert View

The Systems to Convert view features all of the servers that were copied from the All Systems tree. You can designate any of the servers as source or target. This view features several icons and a shortcut menu with commands. When you first access this view, only the Import systems to convert icon is enabled. The other icons will be enabled as soon as you copy a server into the view.

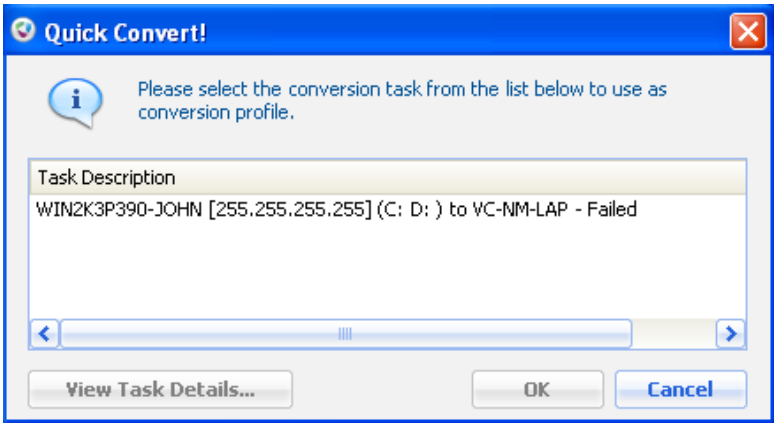


	Refresh
	Export systems to convert—Use this icon to remove any servers that you imported.
	Import systems to convert—Use this icon to add servers to the Systems to Convert view.
	Filter On—Use this icon to locate a system within even a large network. Search by system or IP address, one or multiple values, or wildcards.

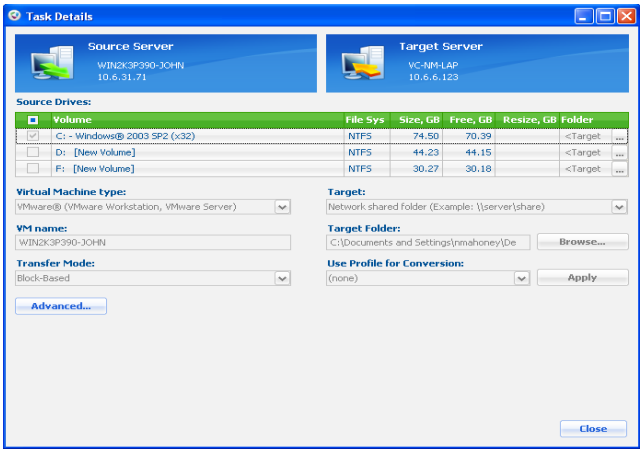
Quick Convert!	Use this command to create a new conversion task based on an existing profile. All of the items listed in the Task Description text box of the Quick Convert dialog will be reconfigured based on the profile. Then, all of the items will be removed from the list.
Create Conversion Task	For every item in the Task Description text box, you can use this command to create a blank conversion task. The task will be based on a default template and the target server that you select. The task will remain on the Task Description list.
Explore	This command opens a source server through Windows Explorer.
Remove	When you select this command, the highlighted server is deleted from the Systems to Convert view. Note: You will not receive a confirmation prompt before the server is removed.
Add to Source	When you right-click a server and select this command, the server name will be copied to the source server hotspot on the Conversion Tasks pane and will be available as a source. This command is available only for new blank tasks after you click the editing icon in the Conversion Tasks pane. Add to Source is not available for existing tasks—in this case, the command either displays disabled or it will not display at all.

Quick Convert

You can use the Quick Convert command to run a conversion job based on an existing task profile. This command is only available by right-clicking a server in the Systems to Convert view of the Network Browser pane. For instructions on using the Quick Convert feature, see the Run a Quick Conversion section later in this chapter.

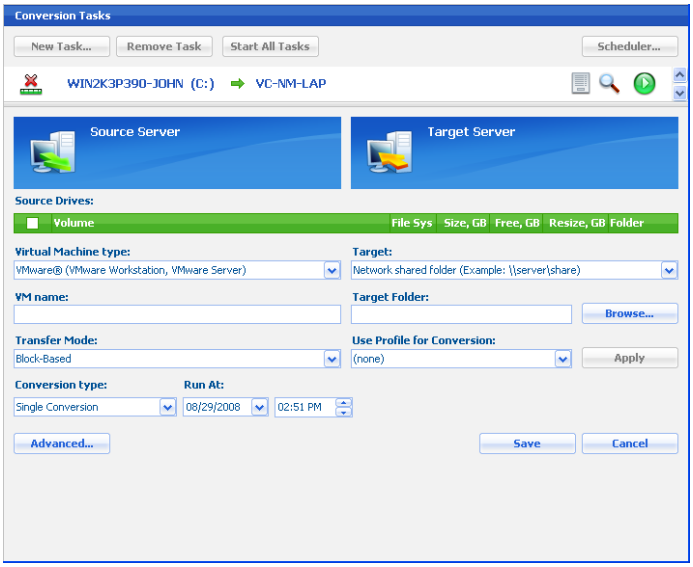


From the Quick Convert dialog you can view details about the profile. When you highlight a task on the list, the View Task Details button is enabled. Click this button to open the Task Details dialog.



Conversion Tasks Pane

In this area of the vConverter window, you can access the commands that allow you to create and delete conversion tasks as well as run and schedule jobs. Defining basic properties for a job is discussed below. For information on advanced properties, see the section of the same name later in this chapter.



To enable the fields in the Conversion Tasks pane, click the Edit  icon. Just above the area where you define basic properties, there is a group of columns within the Source Drives field.

Volume	Identifies source volume and location. Select a checkbox for the volume you want to use in a conversion. Note: You must assign a drive letter. Otherwise, the disk will not display in the Volume field.
File System	Identifies file system type.
Size, GB	Identifies size of volume.
Free, GB	Indicates disk space free on the target.
Resize GB	Use the arrows in this field to enter a new size for a volume. You cannot make a partition smaller than the amount of data used in the volume. Notes: To secure an accurate value, you must make the change using the arrows. To decrease the size of a volume, you must enable the Create flat disk image option through Task Profile Properties→Disks. You can confirm that it is enabled on the Advanced Properties dialog.
Folder	Identifies the folder name for the target.

Basic Properties

Virtual Machine type	Refers to the type of target VM: • VMware ESX Server (ESX 3.x)* • VMware (VMware Workstation, VMware Server) • Microsoft Virtual PC (all Versions) • Legacy VMware (ESX 2.x)* • Microsoft Virtual Server (All versions) • Virtual Iron (All versions) • XenServer (4.0.1 and above)* *These VM types require that you enable Create flat disk image through Task Profile Properties→Disks. The Target dropdown is populated based on the value that you select in the Virtual Machine type field.
VM name	Name of VM. The default value is the name of source server. Volumes configured for alternate locations are created in a subdirectory that matches the value specified by the VM name field.
Transfer Mode	Select transfer mode—Block-Based or File-Based. Block-Based is the default. It allows you to skip unused sectors but it requires that the source and target disks are the same size. File-Based involves full file synchronization, a method most suited to large source volumes.
Conversion type	Specifies scheduled conversion type: • Manual • Single Conversion • Remote Cold Cloning • Synchronized Cutover • Continuous Protection • Different Destinations Cutover If you select any other conversion type but Manual, additional fields display. For instructions on using all of these conversion types, see the Create and Run Conversion Jobs section later in this chapter.
Run at	Specifies the date and time to start the scheduled conversion for Single and Remote Cold Cloning conversion types.
Initial	For Synchronized Cutover, Continuous Protection, and Different

Synchronization At	Destinations Cutover, this field indicates the date and time of initial synchronization.
Synchronization Interval	For Synchronized Cutover, Continuous Protection, and Different Destinations Cutover, this field indicates the number of times within a particular timeframe (hours….) that synchronization will occur.
Final Synchronization At	For Synchronized Cutover, this field indicates the date and time of final synchronization.
Current Activity	This dropdown displays when you select Different Destinations Cutover as the conversion type. The values in this field include: • Initial Conversion—active • Changing Destination—paused • Final Synchronization—active
Target	Destination of conversion. This field is populated based on the value that you select in the Virtual Machine type field. If you select conversion to ESX Server or Xen, this is a network shared folder or explicit server address.
Target Folder	Location of the VM on the target server. If you do not specify a folder value during job configuration, the VMDK file location defaults to the same location as the VM configuration files in the Target Folder field. Note: If you select a folder that begins or ends with a whitespace, an error message will display.
Use Profile for Conversion	Populates with data based on profiles created earlier. Default is (none). After you select a profile from the dropdown, the Apply button adjacent to the field becomes enabled. It remains disabled if the value is (none).
Advanced	Opens the Advanced Properties window, which features general information about altering the virtual disk type and Hardware Abstraction Layer (HAL) type. When you close that window, the Advanced Properties dialog displays with several tabs—Disks, VM, Migration, and Login. For additional information the fields on these tabs, see the Advanced Properties section in this chapter.
Cutover Now	This button displays when you select Synchronized Cutover as the conversion type.

There are several buttons and icons on the Conversion Tasks pane.

New Task	Opens the New Task Editing window that contains general instructions on creating a new task.
Remove Task	Click this button to delete the selected task from the Task Description list.
Start All Tasks	Click this button to initiate all conversion jobs. Note: Using this command will override all existing schedules for conversion jobs.
Scheduler	Opens the Conversion Tasks Scheduler window, where you can view the dates and times for all scheduled conversions. From this window, you can reschedule a conversion job through the Appointment dialog. Note: For a task to display in this dialog, first it must be configured and saved.

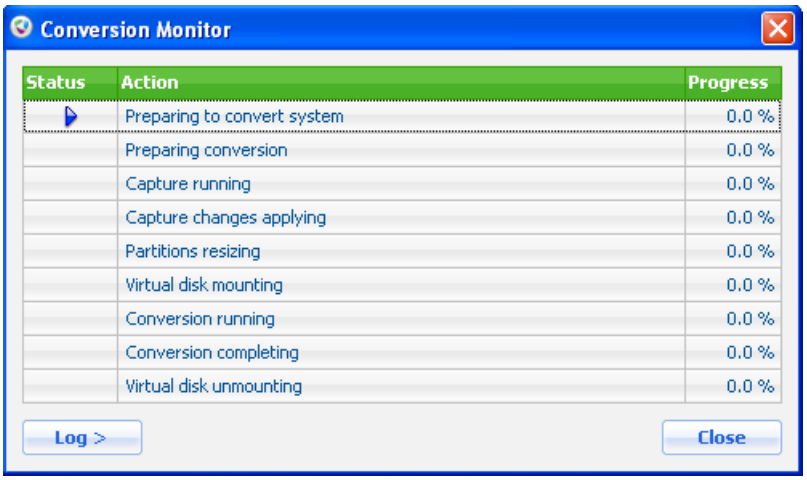
<undefined> <undefined>	After you select a source and target, the server names display from left to right, respectively, in place of <undefined>.
	Edit conversion task properties: Use this command to make changes to an existing task.
	Open the Conversion Monitor window for this task: Access this window to check on the progress of a conversion job. The window features several columns—Status, Action, and Progress.
	Start conversion: Click this icon to launch a conversion job immediately. Doing so will override any previously scheduled jobs. If this icon displays, then the job has not yet been run.
	Stop conversion: This icon displays while the job is running. Click it to stop the conversion.

To the left of the source listed in this pane, several status icons display.

	Conversion job running
	Conversion job finished successfully
	Conversion job failed
	Conversion job stopped
	Conversion job paused or not yet started

Conversion Monitor Window

This window provides progress information about conversion jobs that are running or have completed. The steps that display in the Action column are not necessarily in precise sequential order. That is, if multiple conversions are running simultaneously, the "Capture running" step will advance to 100.0% for the first volume and then reset to begin progress toward 100.0% for the second volume.

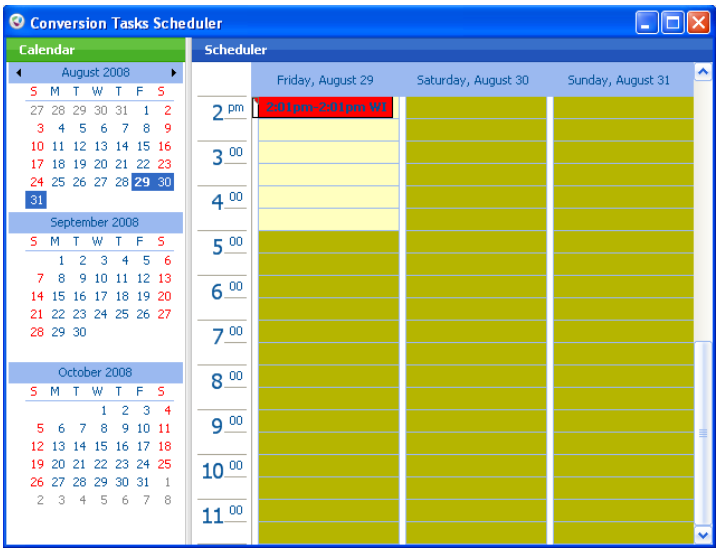


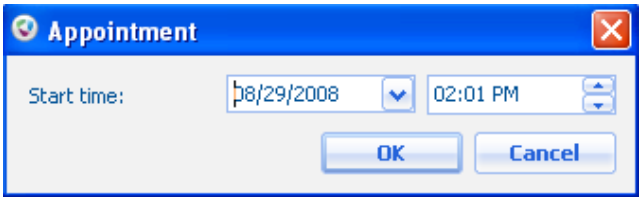
Several status icons and a button are available on the Conversion Monitor window.

	Conversion step not started or paused
	Conversion step running now
	Conversion step completed successfully
	Conversion step failed
	Conversion step stopped by user
	Click this button to display a log.

Conversion Tasks Scheduler Window

This window displays all scheduled conversion jobs in a calendar format. You can reschedule a conversion job by editing it. If you double-click on a conversion job within the window, the Appointment dialog displays. Use this dialog to reschedule a job to run on another date at another time.

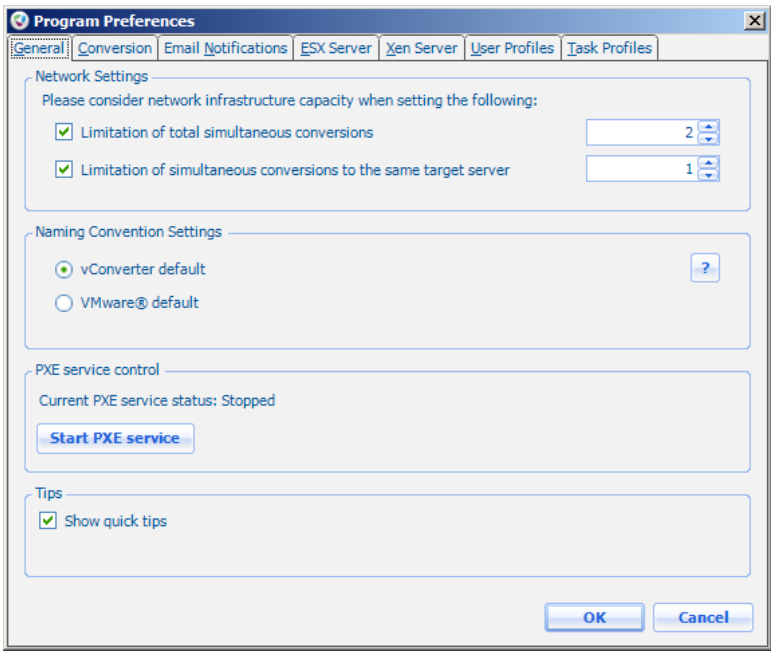

Conversion Tasks Scheduler
Calendar
Scheduler
August 2008
S M T W T F S
27 28 29 30 31 1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
September 2008
S M T W T F S
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30
October 2008
S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31 1
2 3 4 5 6 7 8
Friday, August 29
Saturday, August 30
Sunday, August 31
2 pm
2:01 pm-2:01 pm W1
3 00
4 00
5 00
6 00
7 00
8 00
9 00
10 00
11 00


Appointment
Start time:
08/29/2008
02:01 PM
OK
Cancel

Program Preferences Dialog

You can access the Program Preferences dialog through Tools→Preferences. Descriptions of all of the fields on this dialog's tabs are below.

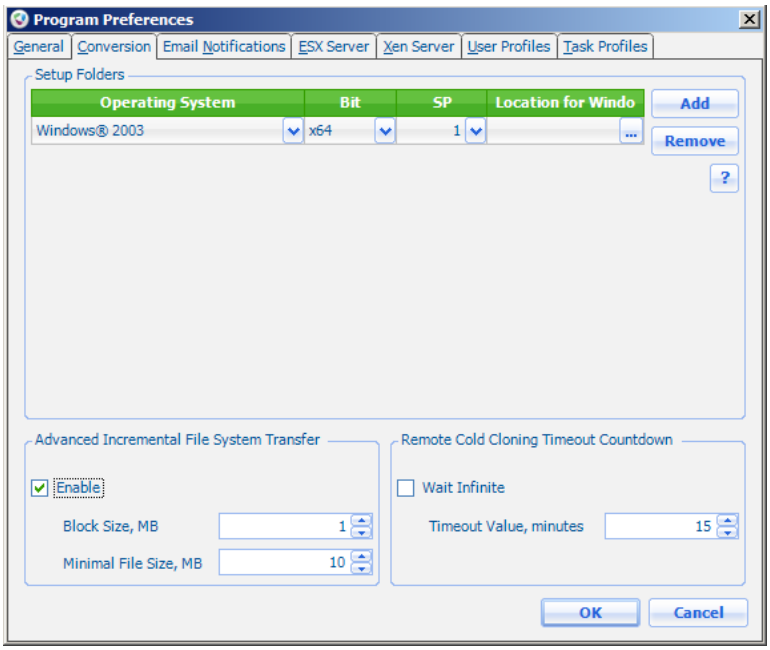
General Tab



Network Settings	Limitation of total simultaneous conversions: The value you enter in this field will restrict the number of conversions that you can run simultaneously. Limitation of simultaneous conversions to the same target server: The value you enter in this field will restrict the number of conversions that you can run simultaneously to each target server. Note: The values that you enter in these fields will depend on your environment's capacity in several areas—for example, host memory, network bandwidth, and CPU availability.
Naming Conventions Settings	vConverter default—Software appends an underscore and drive letter to the server name (e.g., ABC.c.vmdk). VMware® default— Software appends an underscore and number to the server name (e.g., ABC.vmdk, ABC_1.vmdk, ABC_2.vmdk) for multiple VMDKs.
PXE service control	PXE Service is used to transfer the Vista PE image to target systems via the network. Refers to current PXE service status. Two statuses are available: • Start

	• Stop PXE service
Tips	Select this option to display tips throughout the application—Show quick tips.

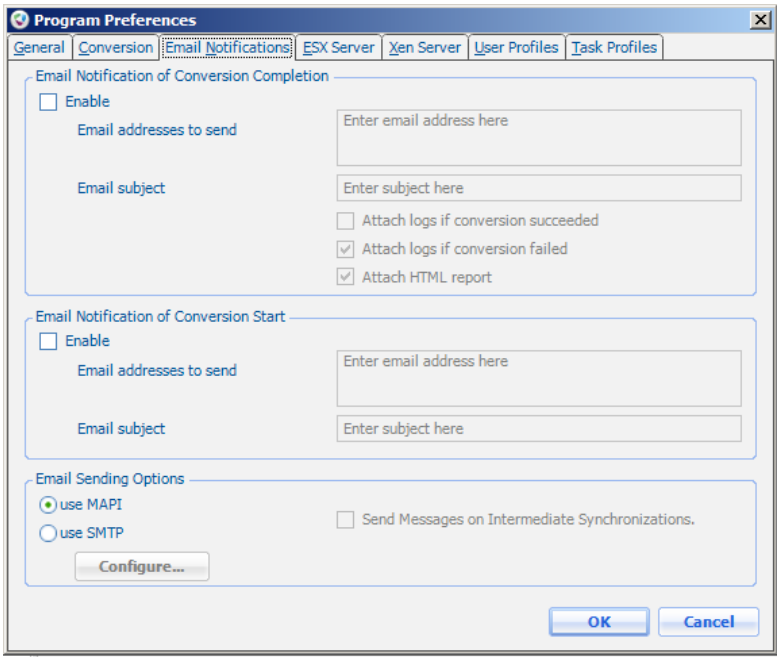
Conversion Tab



Operating System	The name of the OS that you intend to migrate.
Bit	Select either a 32-bit or 64-bit source.
SP	Refers to the service pack of the OS to be migrated.
Location for Windows® setup or Service Pack files	Indicates the location for storing the kernel and driver files required for OS migration.
Advanced Incremental File System Transfer	Allows you to enable incremental file system transfer based on block and file size.
Remote Cold Cloning Timeout Countdown	Allows you to configure the amount of time that passess between rebooting a source server and the actual conversion process.
Add/Remove	Use these buttons to add or remove setup folders within the system.

Email Notifications Tab

If you enable these fields, you will receive notifications of conversion jobs that succeed or fail. You can trigger emails at job initiation as well as intermediate synchronization.

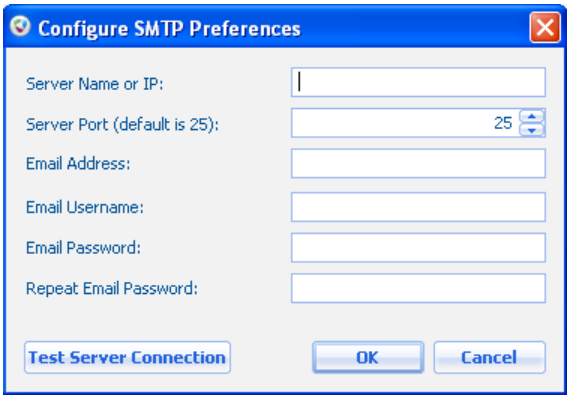


Email Notification of Conversion Completion	Select the Enable checkbox to activate these fields: Email addresses to send—Use this field to enter email addresses for those who should receive alerts when conversion jobs start or complete. Email subject—Populate this field with the text that you want to display in the Subject line of the alerts sent to the recipients listed in the Email addresses to send field. Attach logs if conversion succeeded—Select this checkbox to attach relevant log files if a job succeeds. Attach logs if conversion failed—Select this checkbox to attach relevant log files if a job fails. Attach HTML report—Select this checkbox to attach an HTML report to the notification email.
Email Notification of Conversion Start	Select the Enable checkbox to activate these fields: Email addresses to send—Use this field to enter email addresses for those who should receive alerts when conversion jobs are initiated. Email subject—Populate this field with the text that you want to display in the Subject line of the alerts sent to the recipients listed in the Email addresses to send field.

Email Sending Options	The options available in this field are: • use MAPI • use SMTP Use the Configure button to access the Configure SMTP Preferences dialog. From this dialog, you can test the server connection that you configure. The button becomes enabled when you select SMTP. Send Messages on Intermediate Synchronizations: If you select this checkbox, you will receive email notifications on intermediate as well as initial and final synchronizations.

Configure SMTP Preferences Dialog

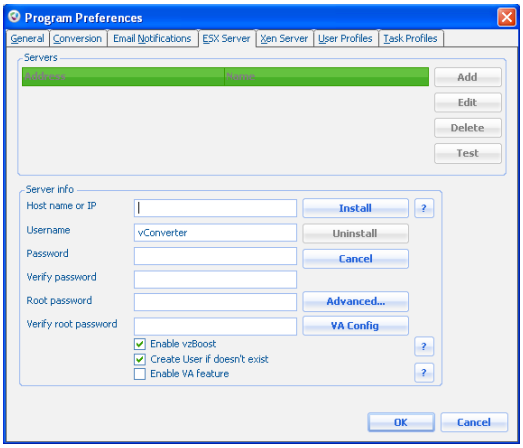
If you select SMTP on the Email Notifications tab of the Program Preferences window, the Configure button is enabled. When you click this button, the Configure SMTP Preferences dialog displays.



Server Name or IP	The name of the SMTP server or its IP address.
Server Port (default is 25)	The port for the SMTP server.
Email Address	This is the address to which email notifications about this server will be sent.
Email Username	This is the user to whom email notifications about this server will be sent.
Email Password	This is the password of the user to whom email notifications about this server will be sent.
Repeat Email	This is the password of the user to whom email notifications about

Password	this server will be sent.
Test Server Connection	Use this button to test the connection to the SMTP server that you configured.

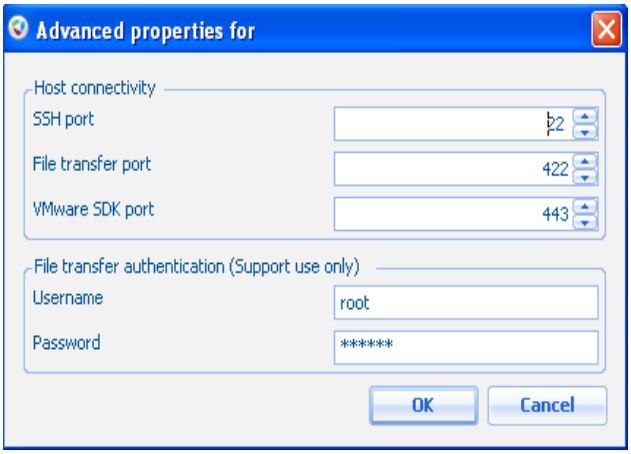
ESX Server Tab



Servers	Lists all of the ESX Servers—by IP address and name—that are available for conversion. Allows you to add, delete, and test connectivity.
Server info	The fields on this tab include general properties for the ESX Servers in the system: • Host name or IP • Username • Password • Verify password • Root password • Verify root password Use these options to configure individual ESX Servers: Enable vzBoost, Create User if doesn't exist, and Enable VA feature checkboxes. Click the Install button to install an ESX Server and the Uninstall button to remove it from the system. Note: The installation will fail if the credentials you enter are invalid. For information on the Advanced and VA Config buttons, see the sections below.

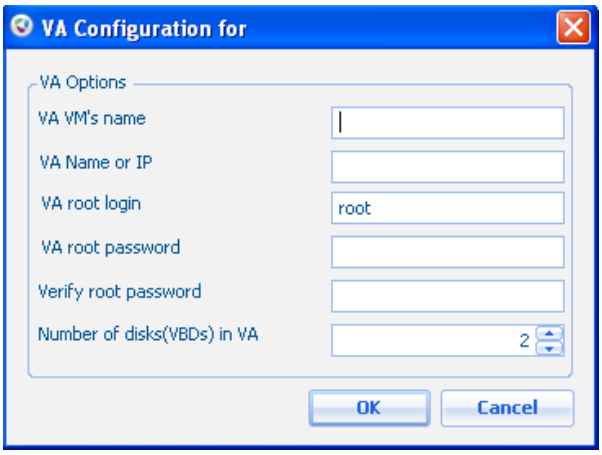
Advanced Properties Dialog

If you click the Advanced button on the ESX Server tab, the Advanced properties dialog displays. Although you can adjust port settings through this dialog, it is best to leave the defaults in place.

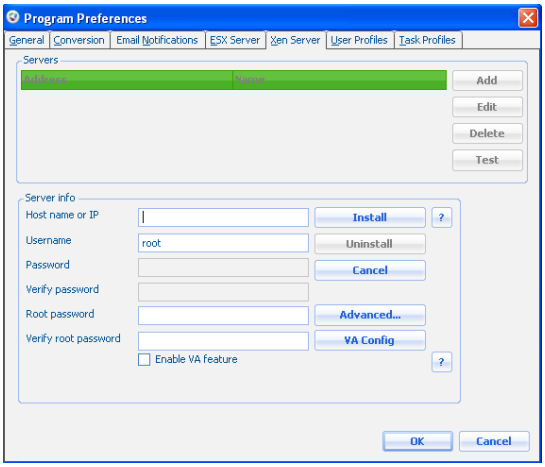


VA Configuration Dialog

If you click the VA Config button on the ESX Server tab, the VA Configuration dialog displays. On this dialog, you can configure VA, including the number of disks it has.



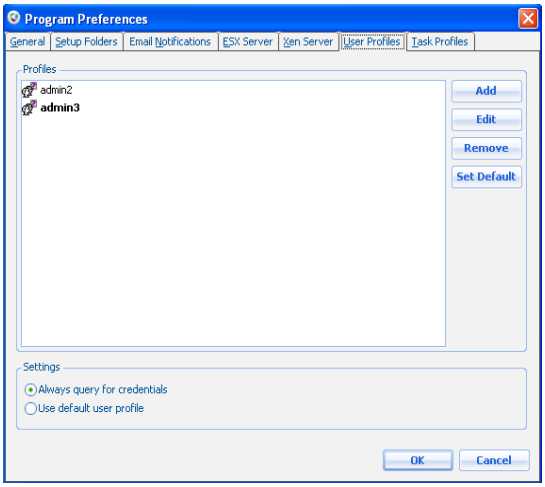
Xen Server Tab

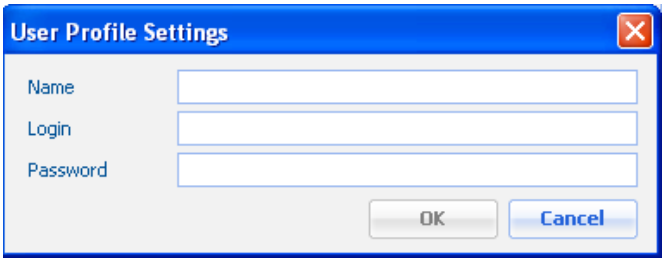


Servers	Lists all of the XenServers—by IP address and name—that are available for conversion. Allows you to add, delete, and test connectivity.
Server info	The fields on this tab include general properties for the XenServers in the system: • Host name or IP • Username • Password • Verify password • Root password • Verify root password Select the Enable VA feature checkbox to configure individual XenServers. Click the Install button to install a XenServer and the Uninstall button to remove it from the system. Note: The installation will fail if the credentials you enter are invalid. If you click the Advanced button, the Advanced properties dialog displays. You can adjust port settings through this dialog, but it is best to use the defaults. If you click the VA Config button, the VA Configuration dialog displays. On this dialog, you can configure VA, including the number of disks it has.

User Profiles Tab

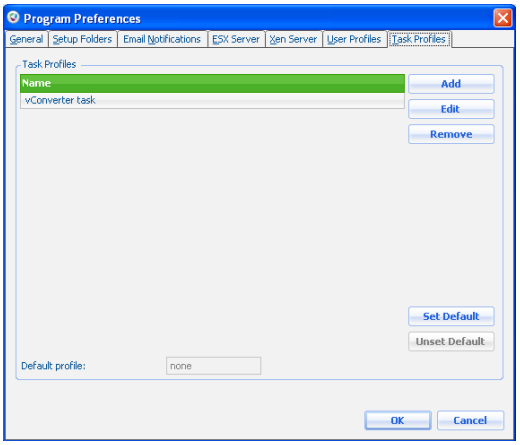
You can add, delete, and edit user profiles through this tab. If you create a profile that you want to use for the entire network, you can set it as the default. Then, select the Use default user profile radio button to activate it. The profile that you set as the default displays in boldface. You can also configure the system to prompt for credentials. To access the User Profile Settings dialog, select Tools→Preferences→User Profiles→Add.





Task Profiles Tab

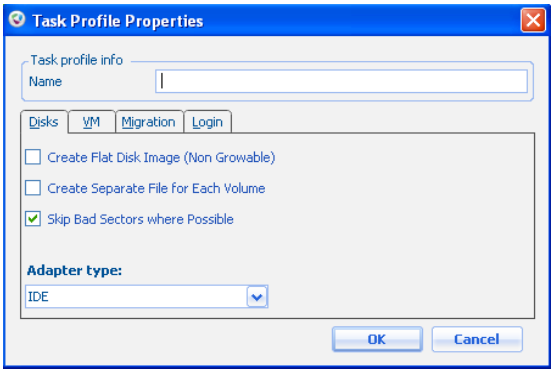
You can create profiles associated with conversion jobs. If you set a default profile, this will be applied to all new conversion jobs that you create, except for those added through Quick Convert. When you set a task profile as the default, it displays in boldface in the main dialog area; it also displays in the Default profile field.



Task Profile Properties

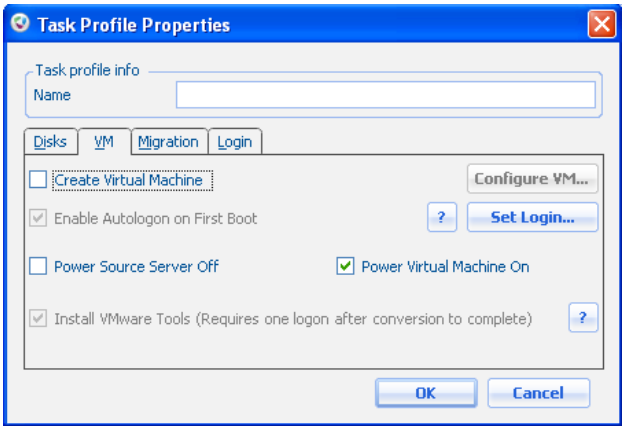
Access this dialog through Tools→Preferences→Task Profiles→Add. The settings that are used to build these profiles are not tied to specific source or target server types.

Note: The Name field in the Task profile info area is a required field.



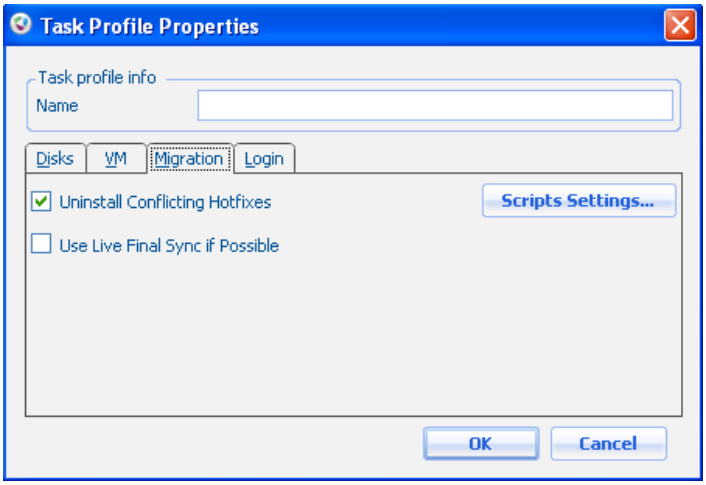
Disks Tab	Lists several options—Create Flat Disk Image (Non Growable), Create Separate File for Each Volume, and Skip Bad Sectors where Possible. Notes: You must enable the Create Flat Disk Image (Non Growable) option to resize a volume through the vConverter Wizard. The flat format is required for ESX Servers and Xen. If you do not enable the Create Separate File for Each Volume option, vConverter will group all volumes in a single image file. The Adapter type dropdown contains a list of virtual disk adapter

	types for VMs and captured disks. If a target VM platform supports a particular adapter type, it will be listed in this field. Available types include: • IDE • LSI Logic • Bus Logic Note: For Windows 2000, select Bus Logic. For Windows 2003 and XP, select LSI Logic.

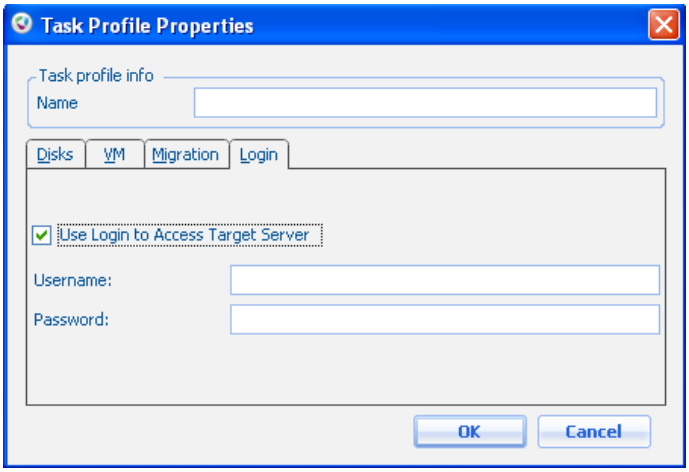


VM Tab	This tab features these settings: Create Virtual Machine—Enabled by default, this option allows vConverter to create a VM. This minimizes the need for manual processing. Enable Autologon on First Boot—Enabled by default. Allows automatic login to a converted VM on first boot. Power Source Server Off—After a conversion completes, if enabled this option automatically powers off the source server. Power Virtual Machine On—Enabled by default. After a conversion completes, enabling this option automatically powers on the VM (for ESX Servers and Xen only). Install VMware Tools (Requires one logon after conversion to complete)—Enabled by default. If enabled, adds VMware Tools/Xen Tools to the applicable server and then powers on the VM. Configure VM: If you click this button, the VM Options dialog displays. Through it, you can create floppies and CD/DVD drives as well as configure RAM.

	Set Login: Clicking this button accesses the Login for Auto Logon dialog. From here, you can set a separate login for the source server.



Migration Tab	Sometimes Microsoft releases a hotfix with an updated HAL.DLL that supersedes the file of the source format included in the current SP. This can cause a VM not to boot. To prevent this, keep the Uninstall Conflicting Hotfixes option enabled. This uninstalls hotfixes that could otherwise impact kernel files during system migration. This option is enabled by default. Select the Use Live Final Sync if Possible checkbox to allow for a live final synchronization. Click Service Manager to access a dialog that allows you to configure services for the source and target. In addition, set Capture Status (Paused, Running, and Stopped) and VM Startup Type (Disabled, Manual, and Auto). Click the Script Settings button to access a dialog that allows you to insert scripts and applications to a target VM. These will run on first boot.



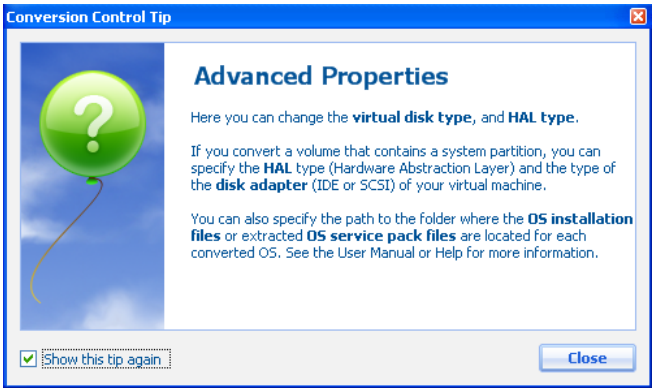
Login Tab	The Use Login to Access Target Server option allows you to set credentials for logging into the target server. When you select this checkbox, the Username and Password fields will be enabled.

Advanced Properties

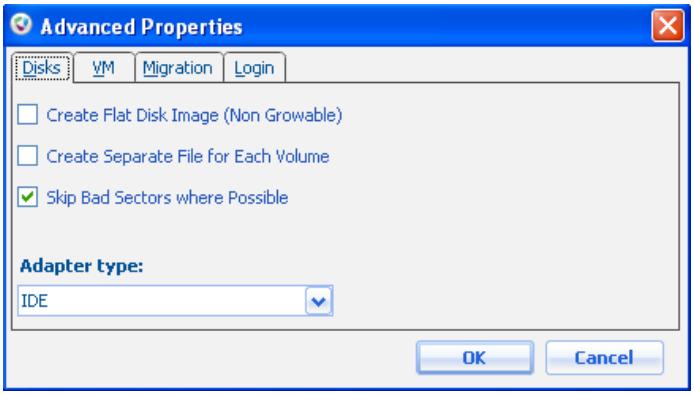
When you click the Advanced button on the Conversion Tasks pane, the Advanced Properties window displays. Then, the Advanced Properties dialog displays. On its tabs, you can define disk configurations and set VM parameters. You can access dialogs that allow you to uninstall hotfixes and software as well as specify script settings and setup folder locations. Lastly, on the Login tab you can set credentials for a target.

To activate the fields on the tabs of the Advanced Properties dialog, first click the edit icon on the Conversion Tasks pane.

Note: You can disable quick tips by accessing the setting through Tools→Preferences→General.



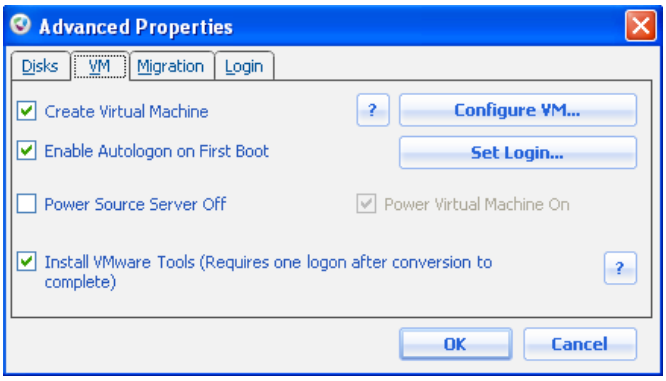
Disks Tab



Create Flat Disk Image (Non Growable)	Indicates that a flat format type should be used for conversion. Flat format is required for ESX Server and Xen, but enabling this option can slow the conversion process. Note: This option must be enabled to allow resizing a volume through the Conversion Wizard.
Create Separate Files for Each	Writes each volume into a separate image file. Otherwise, one image file is created for all converted source volumes. The first

Volume	volume is put into a primary partition; all the other volumes are written into logical volumes within an extended partition.
Skip Bad Sectors where Possible	Turns on/off ignoring disk read errors on the Capture Tool. If this option is off, conversions will fail if a bad sector is found in the source hard drive during capture.
Adapter type	Adapter type for created VM and captured disks. Affects the VM configuration file and set of drivers added to converted the OS during migration. The Adapter type dropdown contains a list of virtual disk adapter types for VMs and captured disks. If a target VM platform supports a particular adapter type, it will be listed in this field. Available types include: • IDE • LSI Logic • Bus Logic Notes: For Windows 2000, select Bus Logic. For Windows 2003 and XP, select LSI Logic.

VM Tab

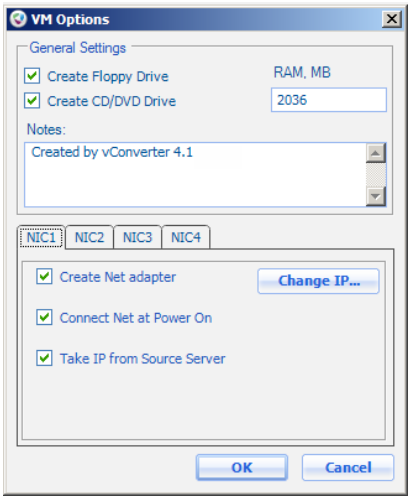


Create Virtual Machine	Instructs vConverter to create a VM descriptor file and registers the VM in the target environment (ESX Server/Xen). Otherwise, only a set of disk image files is created, which you must attach to the VM manually.
Enable Autologin on First Boot	Enables automatic login of specified user in converted VM during first boot. Selecting this option allows you to automatically install VMware Tools and Xen Tools; uninstall programs configured previously; and executes post-conversion tasks.

Power Source Server OFF	Instructs source server to shut down after completing a successful conversion.
Power Virtual Machine ON	Runs the VM after the conversion is complete. Applicable only for ESX Server and Xen targets.
Install VMware Tools (Requires one logon after conversion to complete)	Adds VMware Tools/Xen Tools package to a VM on ESX Server/Xen. vConverter will automatically power on the VM. When you select this setting for ESX Server, vConverter instructs the VM to boot and to acquire VMware Tools from the host on which the VM is installed. For example, if a VM is running on ESX 3.0.1, it will get VMware Tools from 3.0.1.
Configure VM	Opens the VM Options dialog, whose fields are described in detail below.
Set Login	Opens the Login dialog for autologon feature. You can enter alternate credentials for autologon, different than those stored for the source server.

VM Options Dialog

To access the VM Options dialog, click the Configure VM button on the VM tab of the Advanced Properties dialog.

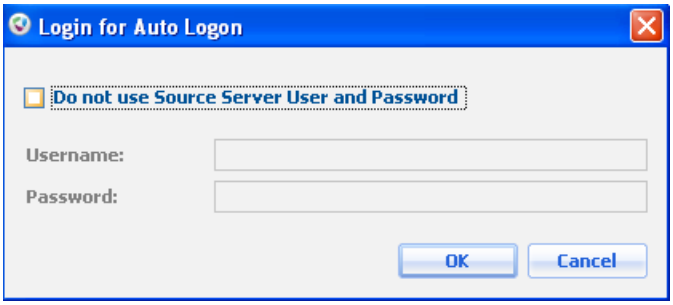


Create Floppy Drive	Select this option to configure the target to feature a floppy drive.
Create CD/DVD Drive	Select this option to create a CD/DVD drive on the target.
RAM, MB	Configure RAM on the target through this field.
Notes (text box)	This field is auto-populated with this text: Created by vConverter 4.1.*x*

	You can alter this and include additional text.
NIC1-4 (tabs)	These tabs allow you to create and configure up to four NICs. These fields are available on the tabs: • Create Net adapter • Connect Net at Power On • Take IP from Source Server Clicking the Change IP button accesses the IP Settings dialog, where you can update IP addresses and DNS settings.

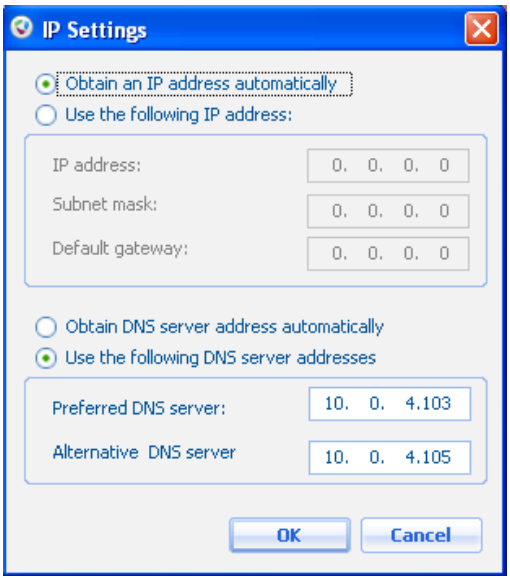
Login for Auto Logon Dialog

To access the Login for Auto Logon dialog, click the Set Login button on the VM tab of the Advanced Properties dialog.

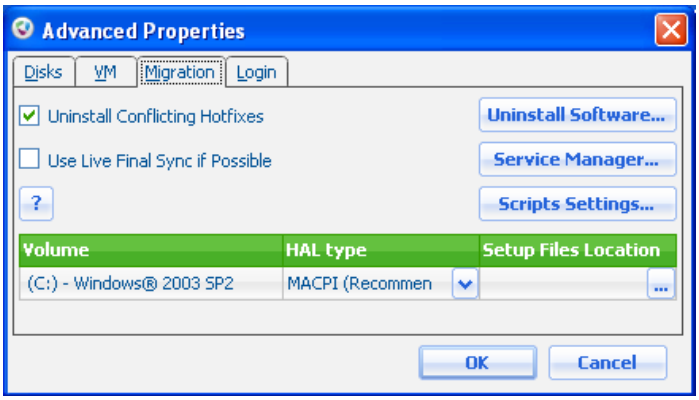


IP Settings Dialog

To access the IP Settings dialog, click the Change IP button on the NIC tabs of the VM Options dialog. To enable the fields on the IP Settings dialog, you must click the Use the following IP address radio button.



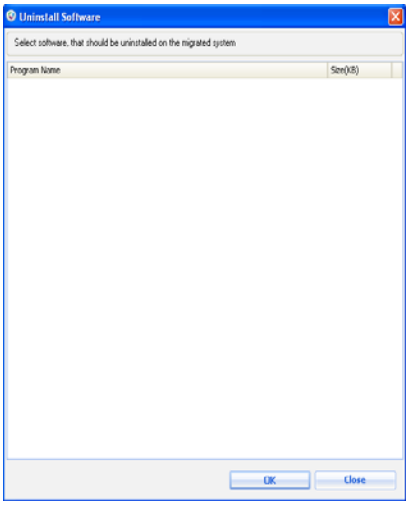
Migration Tab



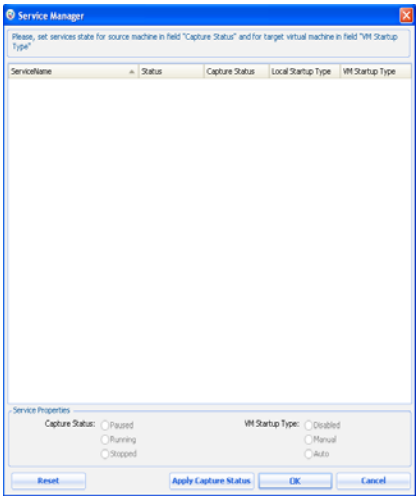
Uninstall Conflicting Hotfixes	If selected (default value), it instructs vConverter to uninstall hotfixes that impact kernel files during system migration. The system will have a consistent set of kernel files after moving to HAL and will boot without blue screen. Note: It is possible to convert the system without uninstalling conflicting hotfixes. This takes less time.
Use Live Final Sync if Possible	Select this checkbox to allow for a live final synchronization.
Uninstall Software	Opens the Uninstall Software dialog. Click this button to uninstall software from the target VM. Enabling this option does not uninstall from the source.
Service Manager	Opens the Service Control dialog. Use this dialog to pause or stop

	Windows services on the source server or target VM. This is useful for transactional systems. Set Windows services on the target to different states—e.g., Manual, Disabled. This is useful for services that control hardware, especially those that might cause a VM to hang. In addition, set Capture Status (Paused, Running, and Stopped) and VM Startup Type (Disabled, Manual, and Auto).
Scripts Settings	Opens the Scripts Settings dialog. Use this dialog to insert scripts (.cmd, .bat) and dependent applications (.exe, .dll) into a target VM to run on the first boot.
Volume	Refers to the volume to be used in conversions.
HAL type	Select a HAL type—AACPI (uniprocessor) or MACPI (multiprocessor).
Setup Files Location	Use this field to set a location for files required during conversion that are not on the source.

Uninstall Software Dialog

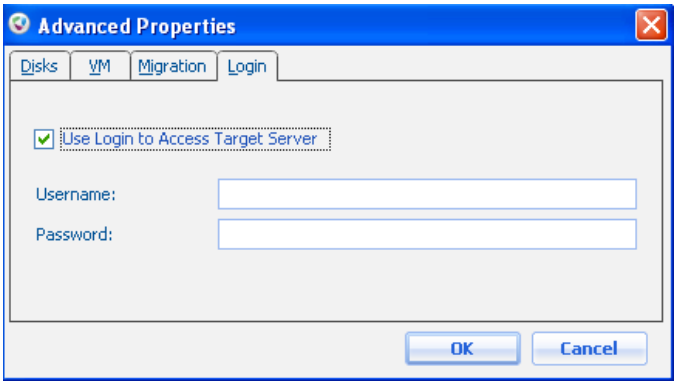


Service Manager Dialog



Login Tab

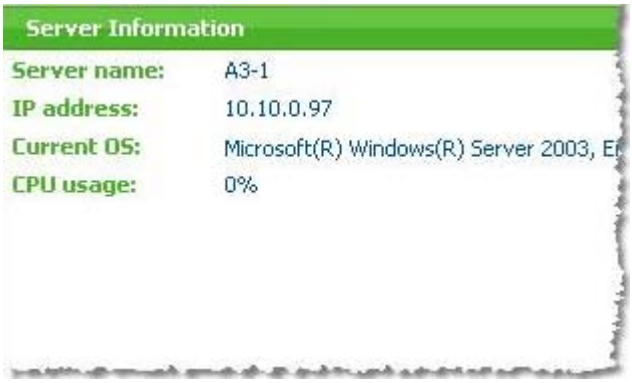
Allows users to specify credentials to log into a target server. This can be useful if a target shared folder is inaccessible for the currently configured user credentials. When you select the Use Login to Access Target Server checkbox, the Username and Password fields are enabled.



Server Information Area

This area at the bottom of the vConverter window displays statistics about the source system currently selected in the Network Browser pane. The data displayed in this area is captured and refreshed by WMI, which requires TCP port 135 to be available. If no data displays in the Server Information area, this means that either no credentials have been associated with the source or WMI is not accessible.

If WMI is available on the source and enabled through the network and Active Directory security policies, a view similar to this will display:



If WMI is not available on the source or has been disabled through the network or Active Directory, a view similar to this will display:

Export Settings

Use this feature to export previously configured vConverter settings and make these configurations available for other installations. This is the general process:

1. Configure vConverter by setting it up for ESX Server and/or Xen. Create task and user profiles.

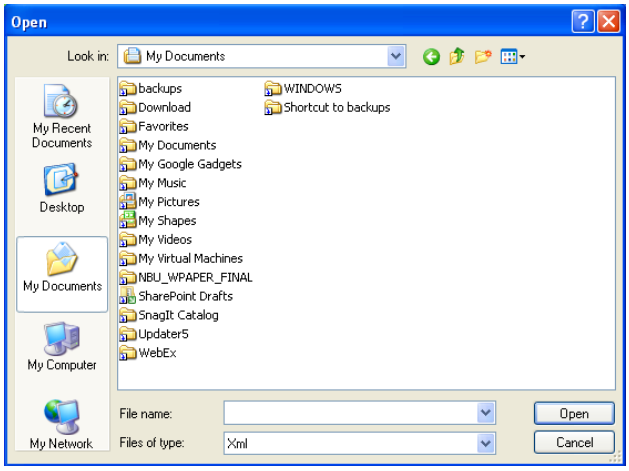
2. On the vConverter window, select **File→Export settings.**

3. On the Save As dialog, click to select the settings to export. Click **Open.**

Import Settings

Use this feature to import settings that you have defined previously. After you configure vConverter for ESX Server, Xen, tasks, and users, you can store the settings and export them for use in downstream installations. You can then import the settings. This is the general process:

1. Configure vConverter by setting it up for ESX Server and/or Xen. Create task and user profiles. Save and store all settings.
2. On the vConverter window, select **File→Import settings.**

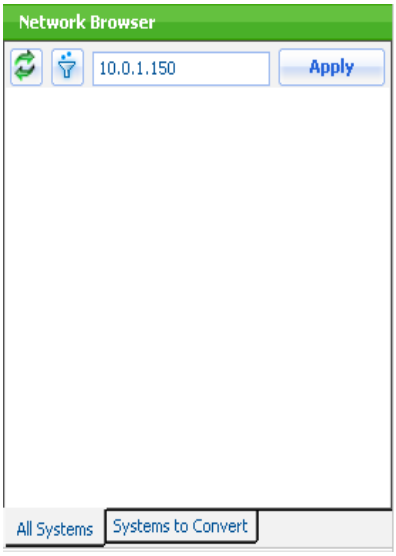


3. On the Open dialog, select the setting to import and click **Open.**

Search with Filtering

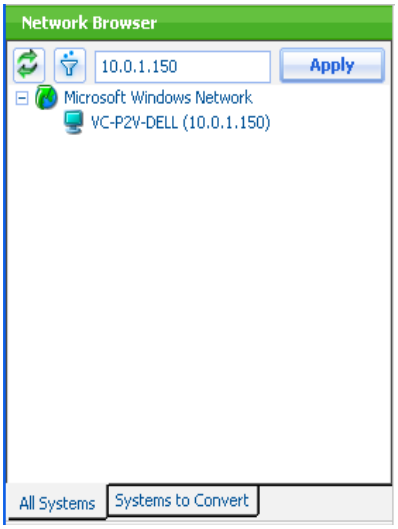
In the Network Browser pane there is a Filter off/on button that is the gateway to searching for hosts on a system level. Use wildcards to search for any character or IP address. To search for multiple values simultaneously, enter the values separated by semicolons (;).

1. In the Network Browser pane, click a tab—**All Systems** or **Systems to Convert.**
2. Click the Filter on  icon.
   The tab clears.
3. Enter a search criterion in the field adjacent to the icon.



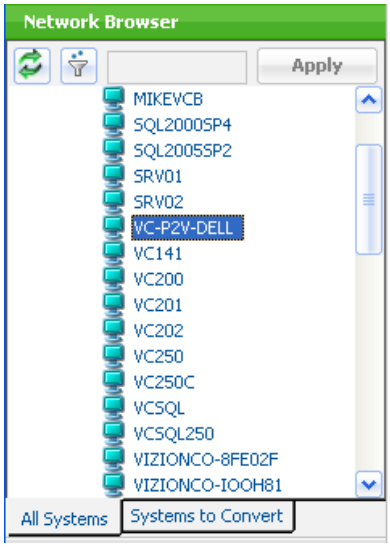
Note: Enter multiple criteria separated by semicolons (;) or enter wildcards.

4. Click **Apply.**
   Search results display.

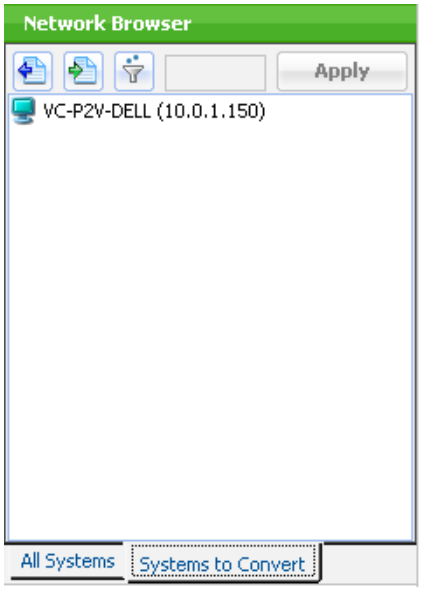


Add System to Convert

1. In the Network Browser pane, click the **All Systems** tab.
2. Right-click the server and select **Add to Systems to Convert.**
   The server that you selected displays in the Systems to Convert tab.



3. Click the **Systems to Convert** tab.
   The server has been copied to this tab.



Import System to Convert

Follow these steps to import a CSV file into the Systems to Convert tab. Before starting this process, make sure that you:

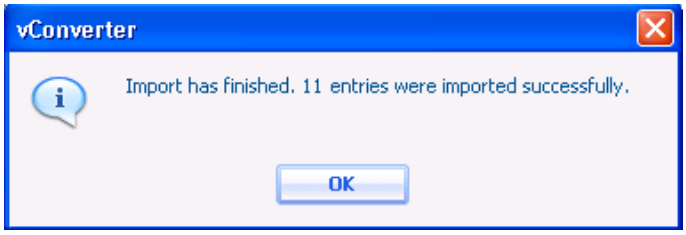
- Confirm that the CSV file is available.
- Confirm that the CSV file contents include three columns similar to those below, with no column labels.

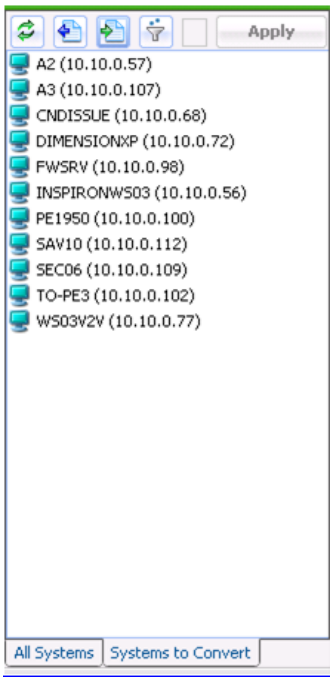
Machinename	Credentials	password

SERVER1	Domain\user	pass@word1

1. In the Network Browser pane, click the **Systems to Convert** tab.
2. Click the **Import systems to convert** icon.
3. On the Windows dialog, click to select the CSV file that you want to import. Then, click **Open.**

   A confirmation message displays. The hosts that you imported display in the Systems to Convert tab.

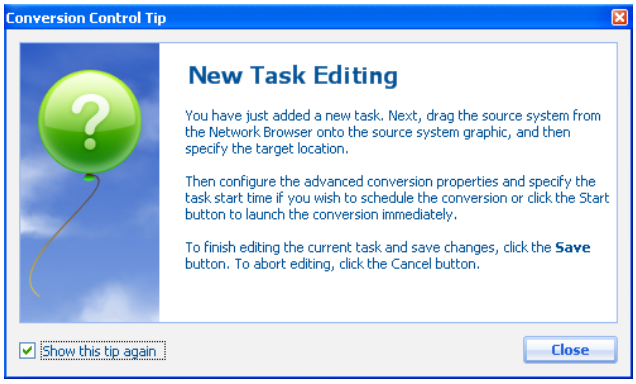




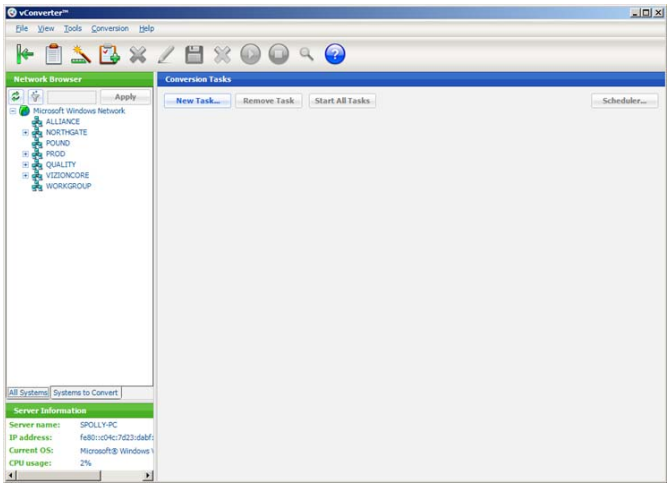
Add New Task

To create a new conversion task, follow the instructions below.

1. On the Conversion Tasks pane, click **New Task.**
   The New Task Editing window displays.



2. You can deselect the **Show this tip again** checkbox. Click **Close.**



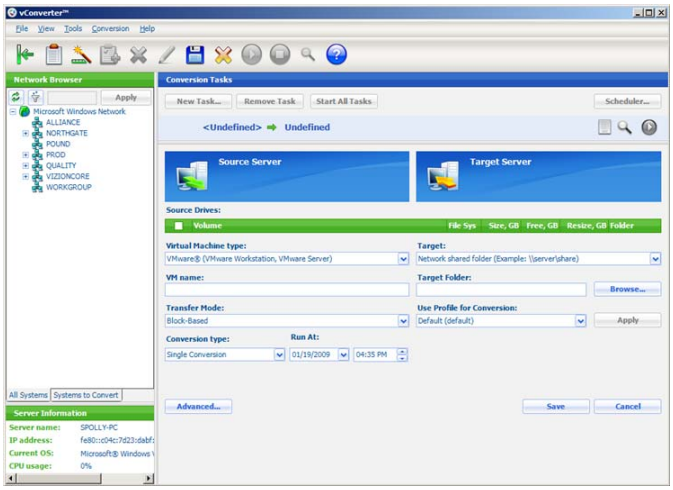
3. From the Systems to Convert view, drag a server to the source server hotspot. After a brief delay, the Server Information area refreshes.

4. Use the fields on the Conversion Tasks pane to define the task. Click **Save.**

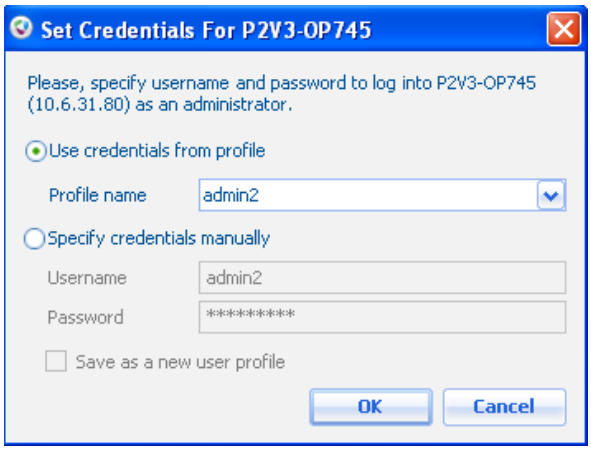
Create and Run Conversion Jobs

Manual Conversion Type

1. From the Systems to Convert view on the Network Browser pane, drag a source to the source server hotspot.
2. Select a volume from the Sources Drives list.
3. Select a value from the Virtual Machine type dropdown.
4. Select a Transfer Mode—**Block-Based** or **File-Based.**
5. Select **Manual** from the Conversion Type dropdown.



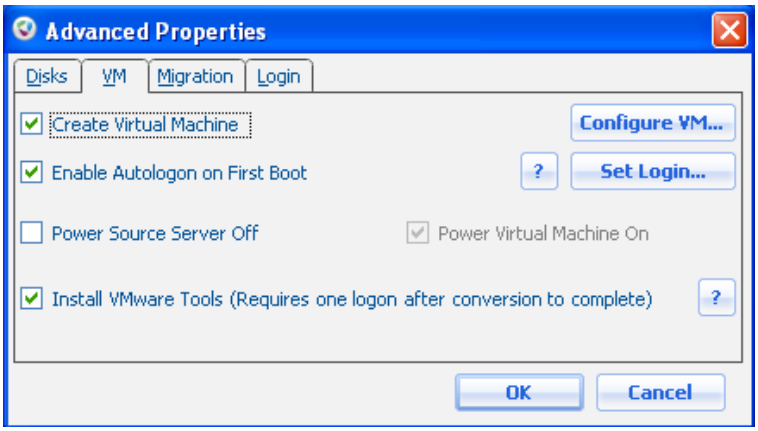
If the Set Credentials dialog displays, select a radio button and populate the appropriate fields. Click **OK.**



6. From the Target dropdown, select a value.
7. In the Target Folder field, select a location for storing the new disk and configuration files.

Notes: VM configuration files include the .vmx file, log files, and other files necessary to operate a VM. vConverter will automatically create the proper subdirectory structure for a VM, based on the specified VM Name value. For direct to ESX conversions, point at the root of the VMFS volume that you want to use. If you select a folder that begins or ends with a whitespace, an error message will display.

8. Click **Advanced.** Close the Advanced Properties opening window.
9. On the Disks tab, select the checkboxes for the settings that you want to configure. Select an adapter type.
10. Click the **VM** tab. Configure the VM.



Create Virtual Machine is selected. It registers the VM automatically on the ESX Server and in VC. Enable Autologon on First Boot is selected, so that the VM will automatically reboot. Install VMware Tools is selected.

For direct to ESX only, click **Configure VM** and make configurations on the VM Options dialog. Click **OK.**

Note: You can create a network adapter but leave it disconnected until the final Windows configuration is complete.

11. Click the **Migration** tab. The Uninstall Conflicting Hotfixes checkbox is selected.

    Click **Uninstall Software** to complete an uninstall on the source servers on first boot of the target VM.

    Click **Service Manager** to control services on the source server and target VM. **Warning:** You must stop transactional services such as databases and email before the conversion process begins. You can also set services that control the target VM's hardware (e.g., Insight Manager) to configure a different startup state (e.g., manual, disabled).

    Click the **Scripts Settings** button to insert scripts and dependent applications into the target VM on the first boot.

Note: This is useful for post-conversion tasks.

12. Click the **Login** tab. To enable the Username and Password fields and enter values for both, select the **Use Login to Access Target Server** checkbox.

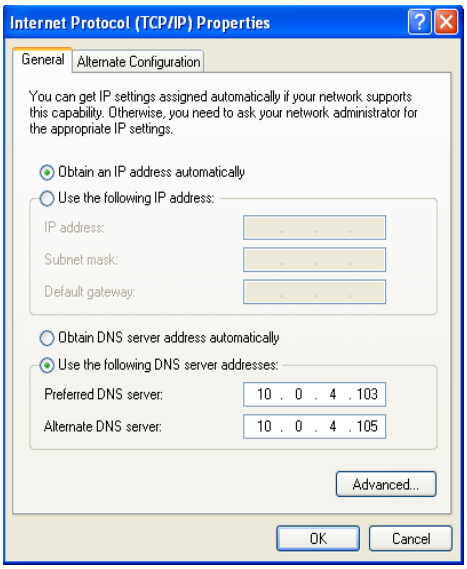
13. Click **OK.**

14. On the Conversion Tasks pane, click **Save.**

15. Click the **Start** icon.

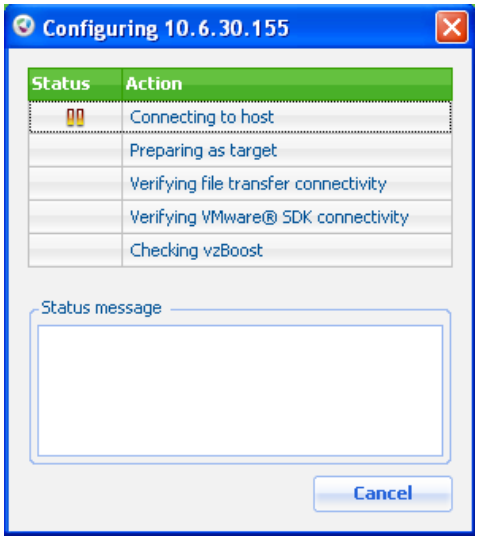
Single Conversion Type

Before beginning this process, confirm that the DNS servers have been set through Control Panel→Network Connections. For instructions, see the *Troubleshooting* section of the Appendix.



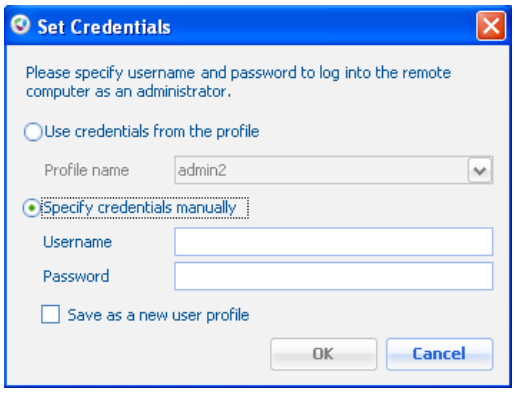
1. On the vConverter window, select **Tools→Preferences.**
   The Program Preferences dialog displays.

2. On the ESX Server tab, click **Add.** Populate all of the fields in the Server Info area and then click **Install.**

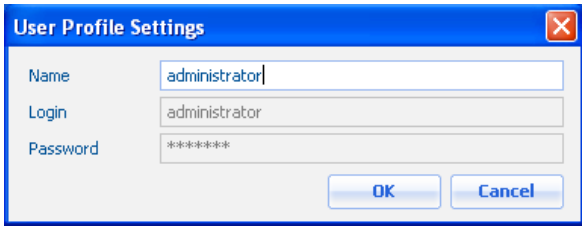


3. When the Status message text box on the Configuring window displays *Configuring successful,* click **Close.** Then, click **OK** on Program Preferences dialog.

4. Drag the source to the source server hotspot on the Conversion Tasks pane. Enter administrator credentials for the source. Select the **Save as a new user profile** checkbox. Click **OK.**



5. When you are prompted to save the user profile, populate the Name field and click **OK.**



6. Set the volume to be converted by selecting the appropriate checkbox below the source server hotspot. Then, select a value from the Virtual Machine type dropdown.

7. Select a Transfer Mode—**Block-Based** or **File-Based.**

8. Select **Single Conversion** from the Conversion Type dropdown.
   A Run At dropdown and spinbox display.

9. Select a date and time, respectively, from the dropdown and spinbox.

10. Select a value from the Target dropdown.

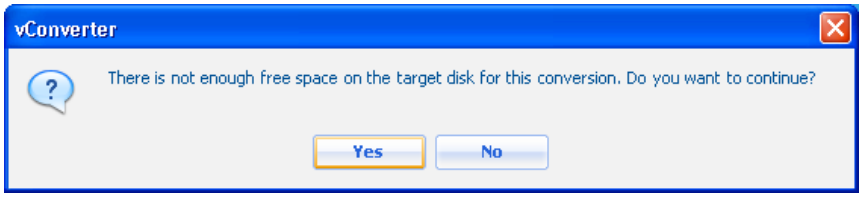
11. In the Target Folder field, select a location for storing the new disk and configuration files.

    Note: If you select a folder that begins or ends with a whitespace, an error message will display.

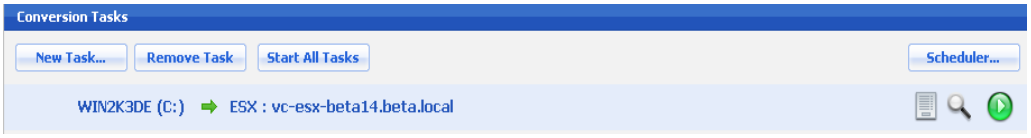
12. If you want to base this job on an existing task profile, select it from the Use Profile for Conversion dropdown. Click **Apply.**

13. Click **Save.**

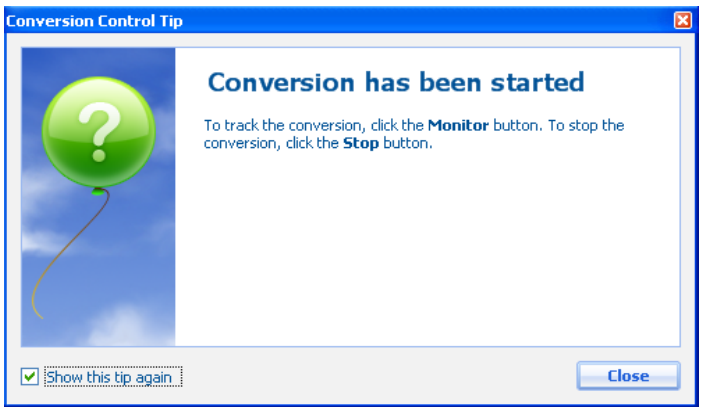
    Note: vConverter confirms that the necessary disk space is available on the target. If there is insufficient space, this message will display. You can save the job or configure another target.



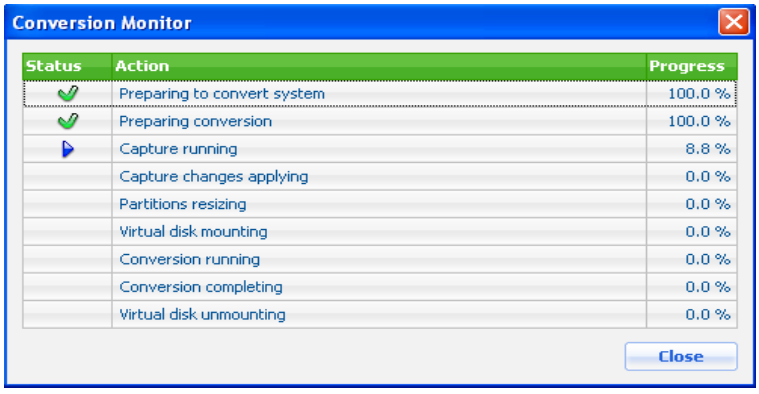
14. To run the conversion job now, click the green arrow icon  above the target server hotspot.



15. Close the Conversion Control Tip window.



16. To check the progress of the job on the Conversion Monitor window, click the magnifying lens icon  above the target server hotspot.



17. After the conversion is successful, click **Close.**

RCC Conversion Type

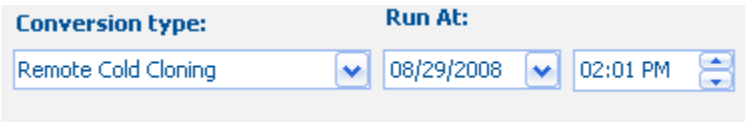
There are two ways to complete RCC—one is automated; the other is not. Both processes are described below.

Automated RCC

1. From the Systems to Convert tab, drag a source to the source server hotspot.

   Note: Automated RCC requires at least 300MB of free space on the system volume of each Source system.

2. Select a volume from the Source Drives list.
3. Select a value from the Virtual Machine type dropdown.
4. Select a Transfer Mode—**Block-Based** or **File-Based.**
5. Select **Remote Cold Cloning** from the Conversion type dropdown.
   Adjacent to the Conversion type field, a dropdown and spin box display—the Run At field.



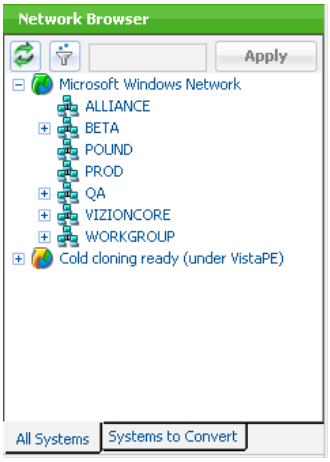
6. Select a date from the dropdown and a time from the spinbox.
7. From the Target dropdown, select a value.
8. Enter a path in the Target Folder field or click **Browse** to locate a folder. Select it and click **OK.**

   Note: If you select a folder that begins or ends with a whitespace, an error message will display.

9. If you want to base this job on an existing task profile, select it from the Use Profile for Conversion dropdown. Click **Apply.**
10. Click **Save.**

Non-Automated RCC

When you add a source system for Non-Automated RCC (by boot CD or by PXE), it will display in the tree of the Network Browser pane under a branch called Cold cloning ready after you reboot. You must select the source and target from this list of servers. Also, you must select Manual or Single Conversion as the conversion type.



11. From the Cold cloning ready (under VistaPE) list in the Network Browser pane, drag a source to the source server hotspot.

12. Select a volume from the Source Drives list.
13. Select a value from the Virtual Machine type dropdown.
14. Select a Transfer Mode—**Block-Based** or **File-Based.**
15. Select either **Manual** or **Single Conversion** from the Conversion type dropdown. Adjacent to the Conversion type field, a dropdown and spin box display—the Run At field.

16. Select a date from the dropdown and a time from the spinbox.
17. From the Target dropdown, select a value.

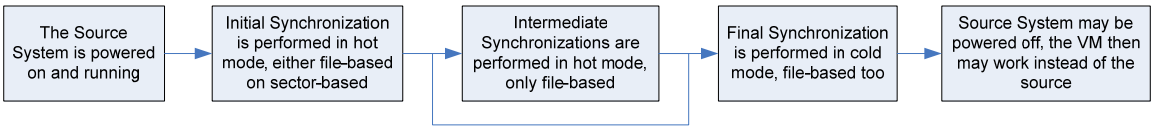
18. Enter a path in the Target Folder field or click **Browse** to locate a folder. Select it and click **OK.**

    Note: If you select a folder that begins or ends with a whitespace, an error message will display.

19. If you want to base this job on an existing task profile, select it from the Use Profile for Conversion dropdown. Click **Apply.**
20. Click **Save.**

Synchronized Cutover Conversion Type

To minimize the cutover window, synchronized cutover completes a full conversion as the source continues to run. Synchronization takes place continuously until the final commit occurs during the cutover window. In other words, vConverter completes an initial conversion. Then, at intervals that you schedule, vConverter determines which files have changed and synchronizes only those files. During the final synchronization, vConverter captures the remaining changes and places them on the target. This allows for a narrow cutover window and fast transition from physical to virtual.



Note: To select a profile from the Use Profile for Conversion dropdown, you must first create a task profile. See the instructions for doing this in Chapter 3.

1. From the Systems to Convert view on the Network Browser pane, drag a source to the source server hotspot.
2. Select a volume from the Source Drives list.
3. Select a value from the Virtual Machine type dropdown.
4. Enter a value in the VM name field.
5. Select a Transfer Mode—**Block-Based** or **File-Based.**
6. Select **Synchronized Cutover** from the Conversion Type dropdown. Adjacent to the Conversion type field, several dropdowns and spin boxes display—Initial Synchronization At, Synchronization Interval, and Final Synchronization At fields.

7. Select values from the synchronization dropdowns and spinboxes.
8. Select a location from the Target dropdown.
9. Enter a value in the Target Folder field or click **Browse** to search for one.

   Note: If you select a folder that begins or ends with a whitespace, an error message will display.

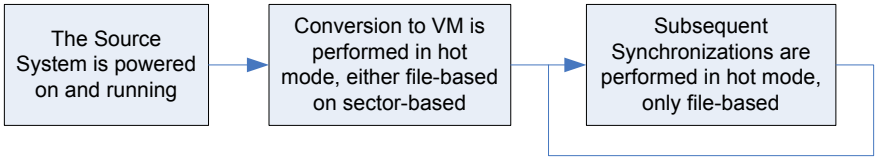
10. If you have configured one, select a profile from the Use Profile for Conversion dropdown. Click **Apply.**

11. Click **Save.**

    Note: A prompt might display, asking you to create a network share.

Continuous Protection Conversion Type

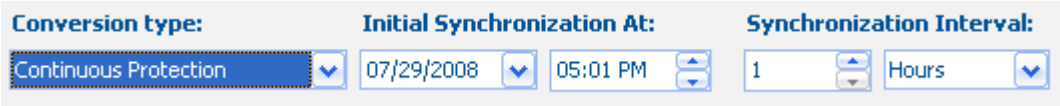
With continuous protection, a virtual copy of a working physical system is made. The source server is only touched by the reads being done. A copy of the source server is made. Replication is performed at user-defined intervals at the target. These intervals are set to keep the source and target perpetually in sync.



vConverter collects filename and attribute information as well as date and time of last update for all files and directories. The data is compared and the new data is updated. The new data is replicated and saved in a new database that is recreated continuously. Since each synchronization completes with OS kernel migration, the data in the target image continues to update. This means that the database does not match actual state at any given time.

Notes: To use Continuous Protection, you must have MS VSS installed. To select a profile from the Use Profile for Conversion dropdown, you must first create a task profile. See the instructions for doing this in Chapter 3.

1. From the Systems to Convert view on the Network Browser pane, drag a source to the source server hotspot.
2. Select a volume from the Source Drives list.
3. Select a value from the Virtual Machine type dropdown.
4. Select a Transfer Mode—**Block-Based** or **File-Based.**
5. Select **Continuous Protection** from the Conversion Type dropdown. Adjacent to the Conversion type field, dropdowns and spin boxes display—Initial Synchronization At and Synchronization Interval fields.



6. Select values from the dropdowns and spinboxes.
7. Select a location from the Target dropdown.

   Note: The Target value can be changed between protection passes if the VM needs to be moved.

8. Enter a value in the Target Folder field or click **Browse** to search for one.

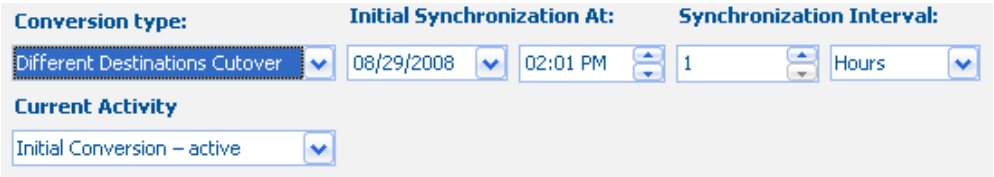
   Note: If you select a folder that begins or ends with a whitespace, an error message will display.

9. If you have configured one, select a profile from the Use Profile for Conversion dropdown. Click **Apply.**
10. Click **Save.**

    Note: A prompt might display, asking you to create a network share.

Different Destinations Cutover Conversion Type

1. From the Systems to Convert view on the Network Browser pane, drag a source to the source server hotspot.
2. Select a volume from the Source Drives list.
3. Select a value from the Virtual Machine type dropdown.
4. Select a Transfer Mode—**Block-Based** or **File-Based.**
5. Select **Different Destinations Cutover** from the Conversion Type dropdown. Several dropdowns and spinboxes display.



6. Select a date and time for initial synchronization. Select numeric and time values for the interval.
7. Select a location from the Target dropdown.
8. Enter a value in the Target Folder field or click **Browse** to search for one.

   Note: If you select a folder that begins or ends with a whitespace, an error message will display.

9. If you have configured one, select a profile from the Use Profile for Conversion dropdown. Click **Apply.**
10. Click **Save.**

    Note: A prompt might display, asking you to create a network share.

Create and Run Conversion Job (Using the Wizard)

If you have already defined task and user profiles, you can use them in combination with the Conversion Wizard to produce conversion jobs.

A few things to address before you begin:

- Confirm that the DNS servers have been set through Control Panel→Network Connections.
- If you intend to resize any volumes during this process, confirm that the Create Flat Disk Image option has been enabled through Tools→Preferences→Task Properties. On the Wizard's Step 4 dialog, you can confirm that this setting has been saved.
- If you are converting multiple volumes and want each to be stored as a separate image file, confirm that the Create Separate File for Each Volume option is enabled through Tools→Preferences→Task Properties.
- If you want vConverter to skip certain sectors on your hard drive, confirm that the Skip Bad Sectors where Possible setting is enabled through Tools→Preferences→Task Properties.

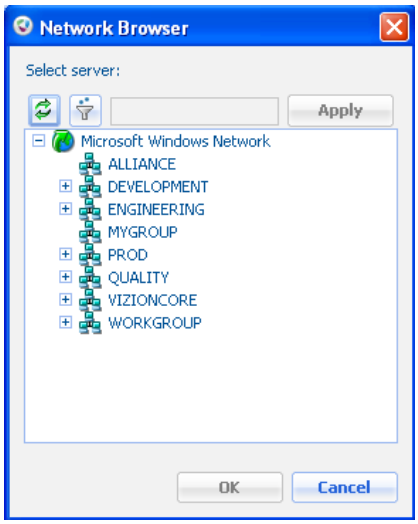
1. In the Toolbar, click the *Run Conversion Wizard*  icon.

2. Click **Close.**
3. Click **Next.**

4. On the Step 1 dialog, populate these fields: Source server, Username, and Password. Click **Next.**

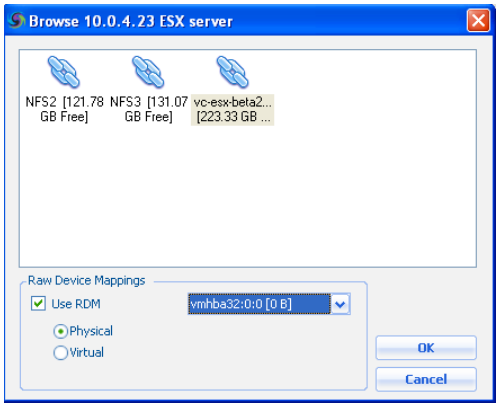
   OR

   Click the browse ellipsis, navigate to a server, and double-click it.



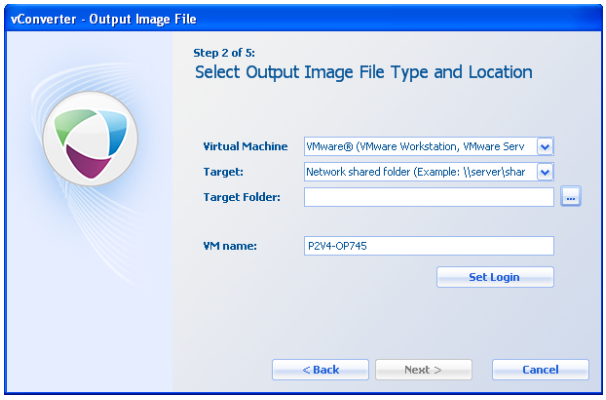
5. On the Step 2 dialog, select values from the Virtual Machine and Target dropdowns. For the target, select **Network shared folder** unless the VM type is VMware ESX Server.

   Enter a target folder—a local directory or a network file share. If you click the browse ellipsis, click to select a folder. If you want to set raw device mapping, select **Use RDM.** Select a radio button—**Physical** or **Virtual.** Make a selection from the dropdown. Then, click **OK.**



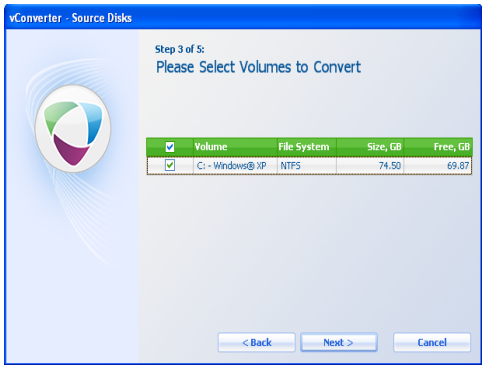
Note: If you select a folder that begins or ends with a whitespace, an error message will display.

Enter a VM name or leave the default (the source server name) as is.

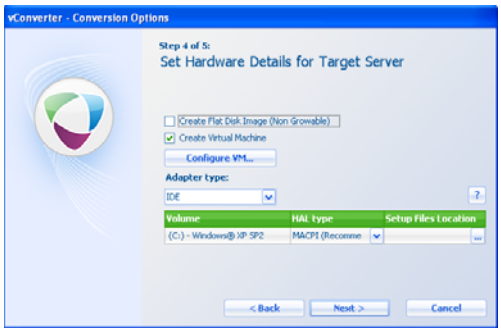


If the credentials for the target and the source are different, click **Set Login** and enter new credentials for the target. Click **OK.** Click **Next.**

6. On the Step 3 dialog, select the checkbox for the volume that you want to convert. You can select multiple volumes.



7. Click **Next.**

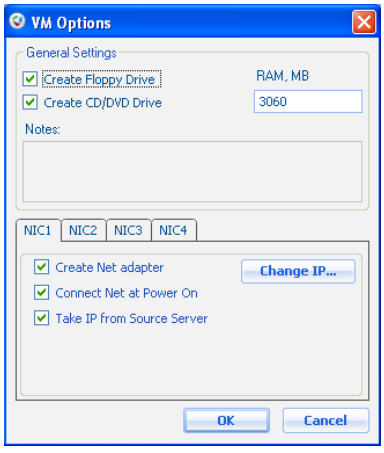


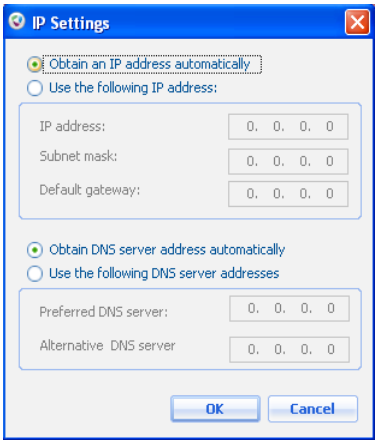
8. On the Step 4 dialog, the Create Virtual Machine checkbox is already selected if you are converting directly to an ESX Server.

   If you intend to resize any volumes, the Create Flat Disk Image (Non Growable) checkbox will be selected and disabled. If it is not, select it.

   To configure the VM, click **Configure VM.** On the VM Options dialog, you can define the RAM for the VM and create floppy and CD/DVD drives. Click **OK** or configure up to four NICs.

   Each NIC can be configured to individual virtual switches; connected or disconnected at power on; and have separate IP addresses. To adjust IP settings, click **Change IP** on any tab. Make updates on the IP Settings dialog and click **OK.** Then, click **OK** on the VM Options dialog.



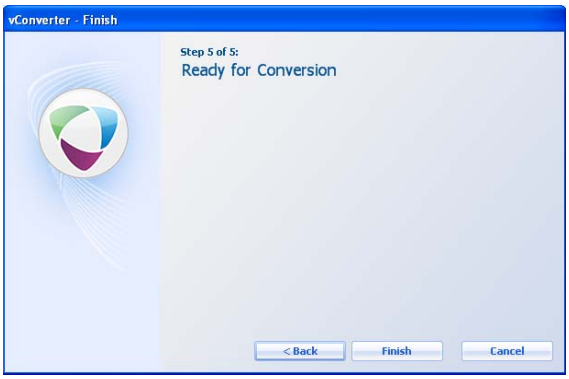


From the Adapter type dropdown, select **IDE, Bus Logic,** or **LSI Logic.**

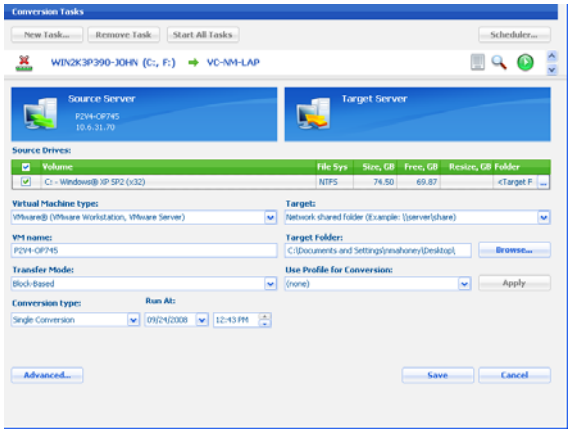
You can select an alternate HAL type from the dropdown—**MACPI (Recommended), AACPI,** and **ACPI** are available.

9. If the OS or extracted SP source files are not located on the source, you can specify a location for them now or anytime before the conversion job is run.

   Click the browse ellipsis next to the Setup Files Location field. On the Browse for Folder window, navigate to the location and click **OK.** The path will display in the Setup Files Location field. On the Step 4 dialog, click **Next.**



10. On the Step 5 dialog, click **Finish.**
    The job is added to the Conversion Tasks pane.



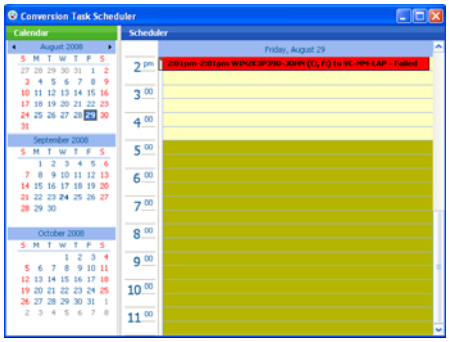
11. To schedule the job to run later, click the Edit  icon on the Conversion Tasks pane. When prompted to save the task, click **Yes.** Click **Scheduler.**

12. Follow the instructions in the *Reschedule Conversion Job* section below.

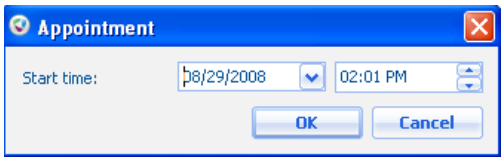
Reschedule Conversion Job

Follow these instructions to reschedule a conversion job to run on another date or at another time.

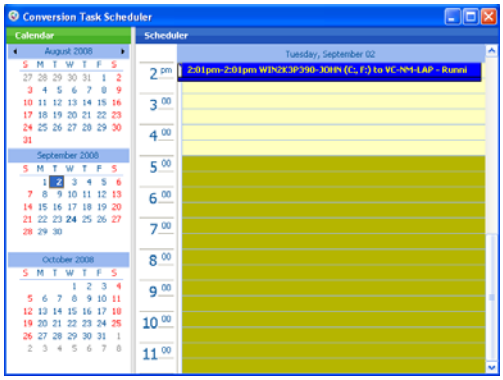
1. Configure a conversion job to run and save it.
2. On the Conversion Tasks pane, click **Scheduler** to access the date and time of the job.



3. Reset the event by double-clicking the job. On the Appointment dialog, adjust the date dropdown and time spinbox. Click **OK.**

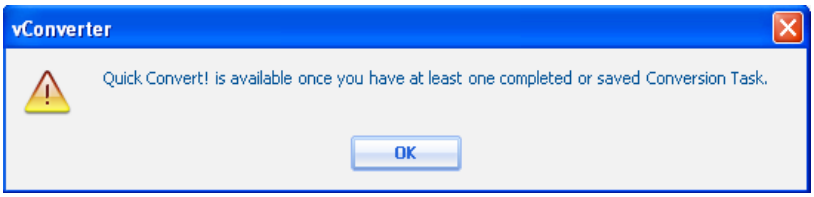


The job is removed from the previously scheduled timeframe and is now scheduled to run on the new date at the new time.

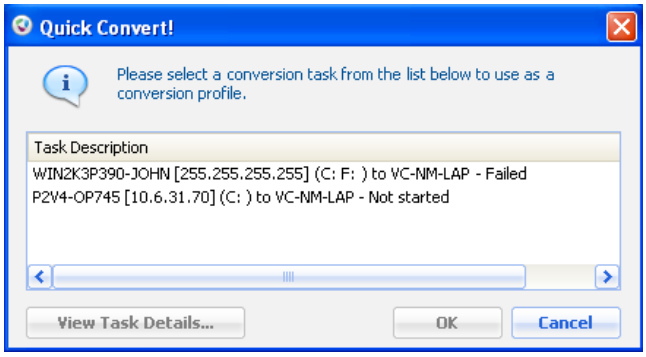


Run a Quick Conversion

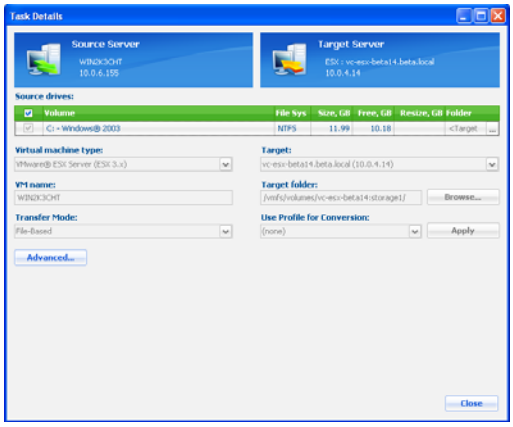
To use the Quick Convert feature, you must have a task profile created to select as the template for the quick conversion job. Otherwise, this error message will display when you attempt to select the Quick Convert command:



1. In the Systems to Convert view, right-click a server and select **Quick Convert!** The Quick Convert dialog displays.



2. To view details about a task, click to highlight the task and then click **View Task Details.** Then, click **Close.**
The Task Details dialog displays.



3. Click to highlight a task and click **OK.**
The Set Credentials dialog displays.
4. Click **OK** to use the credentials entered for this profile. Or, select the **Specify credentials manually** radio button and enter new credentials and click **OK.**

5 Using vConverter CLI

vConverter CLI Overview

The vConverter CLI Tool is both a console C++ application and a DLL library. It integrates all the logic necessary for converting source systems. As a caller application, it converts a system in a single action—you just call the CLI Tool and provide the conversion parameters.

The tool obtains the input parameters from the command line. Console output (stdout) informs the caller application of the status of the current operation being performed by the tool. When the operation completes, a result code is returned. This code indicates the final state of the conversion.

The tool can work in both verbose and brief modes. Verbose mode is used mainly for testing and debugging. Output messages are in human-readable format. Brief mode is used when CLI Tool logging and all output messages are parsed by the caller application. This mode makes the parsing process easier and faster.

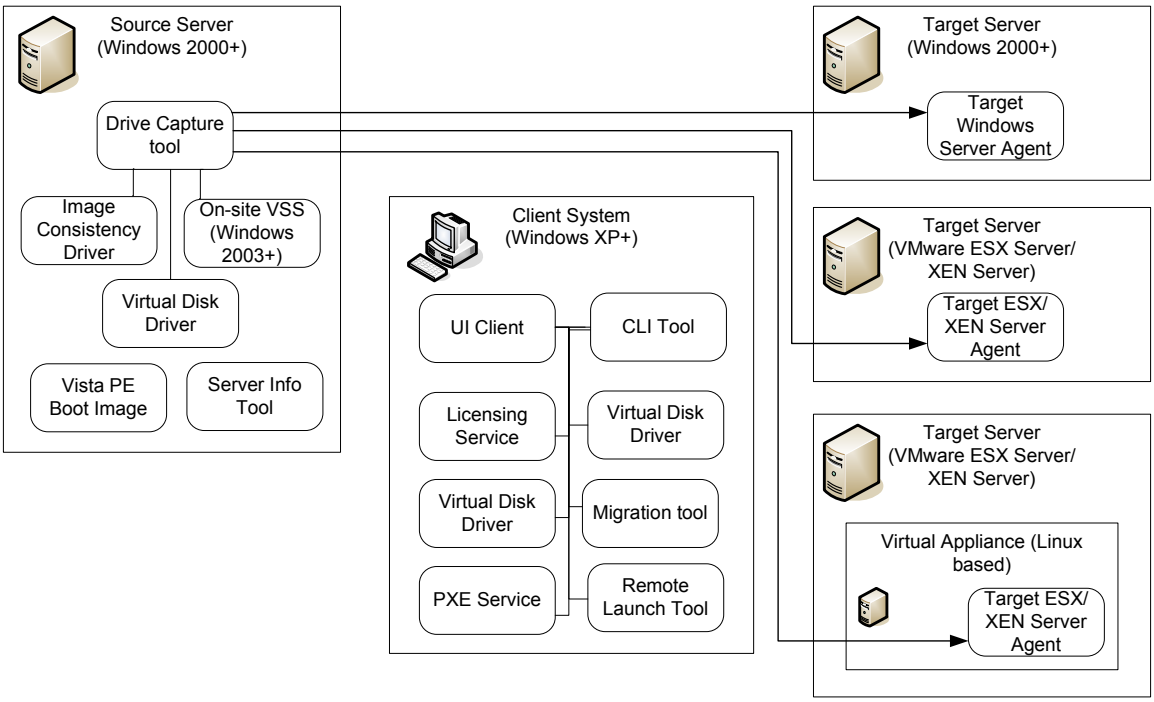
The tool gathers and preprocesses all the logs from the vConverter tools. It runs into one log file in a brief format that can be analyzed and displayed by the caller application. If necessary, more detailed logs can be created for reporting purposes.

vConverter is made up of a group of independent tools, including:

- Partition Info Tool—Runs first on a source server and provides necessary information about boot environment.
- Capture Tool with Consistency Driver—Captures source disks to output file by cluster on a low level.
- Drive Image Mount Tool—Allows get access to a captured disk; similar to a regular system volume.
- Migration Tool—Performs system kernel migration; works with a mounted disk image.
- ESX Target Server Agent (TSA) is used for directly writing to VMware ESX Servers.
- Windows TSA is used to speed up writing large amounts of data to target Windows systems. It is especially effective in capturing flat disk image formats.

vConverter Components

These components are included in vConverter. Some are described in additional detail below.



- Drive Capture Tool with Consistency Support
- Windows P2V Migration Tool
- Drive Image Mount Tool
- UI Client
- Command Line Tool
- Remote Launch Tool
- Licensing Service*
- TSA for Windows hosts
- TSA for VMware ESX Server
- TSA for XenServer and Virtual Appliances (VAs)*
- VA for running on VMware ESX Server*
- VA for running on XenServer*
- Windows Vista PE boot image (.ISO) for cold conversion and restoring*
- Windows Vista PE boot image (.wim) for cold conversion and restoring*
- PXE Service (transfers Vista PE image to target systems via the network)*
- Hot Driver Install utility (allows installing drivers on Vista PE dynamically)*
- Conversion Monitor utility (runs on Vista PE and displays capturing status)*

* These components are not available in CLI package.

Drive Capture Tool with Consistency Support

This component runs on the source server. It reads and transfers disk data to the target server. Its built-in Consistency Driver tracks data changes, so there is no need to stop applications or start services to prevent disk data from modifying while copying.

For Windows XP and Windows Server 2003 systems, you can use Volume Shadow Service (*VSS*) instead of the Consistency Driver, to enforce consistency level for VSS-aware applications such as large databases (MS-SQL server) etc.

Migration Tool

This tool performs the operations necessary to ensure that the system is bootable and functions properly after the move from a physical (or virtual) source to a target virtual hardware platform. The Migration Tool runs on the client system and operates mounted to GUID volume. It puts necessary SCSI drivers compatible with new hardware HAL file and updates the Windows registry on mounted file system.

The tool performs these post-conversion tasks—installs VMware Tools for target desktop VMware versions, schedules running user scripts on migrated systems during first boot, and uninstalls required software from migrated systems.

Drive Image Mount Tool

Using this tool, drive image file content can be seen as a separate disk with read-only or read-write access. The Drive Image Mount Tool uses Virtual Disk Driver to mount the image. It is used in test or troubleshooting scenarios only.

CLI Tool

The CLI Tool allows you to run conversion jobs without using GUI. It was developed to allow P2V features to be added to third-party software. The tool can be used as part of a vConverter installation or as a standalone set of executables. If you select the latter, the CLI Tool can be incorporated into any third-party application to provide conversion functionality.

As a standalone executable, the tool uses License Service running at the same host. As a set of DLLs compiled for use with appointed third-party executables, the CLI Tool does not support native vConverter licensing. Instead, it is bound to a predefined name of caller process. That is, if the caller executable name does not match the expected one, the tool fails.

Remote Launch Tool

The Remote Launch Tool runs an executable on a remote Windows system. It requires having the administrative credentials for the remote system, and uses Windows 2000 features to run.

TSA for Windows Hosts

TSA for Windows Hosts runs on a target system. The feature improves performance in writing disk images compared to writing to Windows shared folders. It is especially effective for capturing images in flat format, where initial allocation of disk space can take significant time when done over the network.

The agent opens TCP port 422 and waits for an incoming connection from the Drive Capture Tool that runs on the source. Once the connection is established, the agent writes received data into the disk image format that you selected.

The transfer is performed by 64K blocks. If an entire block is filled in by the same byte value—for example, it contains zero bytes—the whole block is replaced by a telegram 5 bytes in length for traffic reduction.

TSA for VMware ESX Server

TSA for VMware ESX Server is used to create disk images and write data to the images residing on VMware ESX Server 3.0.x and 3.5. The feature must be run in COS running xinetd daemon.

The CLI Tool package cannot install the TSA for ESX Server. You must install the agent manually or through the GUI by accessing Preferences→ESX Server→Add.

Warning: TSA for VMware ESX Server uses its own authentication scheme, which differs from the one used in COS.

The default login credentials are:

Username: root
Password: vmware

To change these credentials, you must run a utility that is included in the TSA bundle.

Command Line Arguments

Running CLI Tool Executable

CLI Tool executable—*vccli.exe*—was primarily developed as a CLI utility for users who want to automate the conversion process by running it from batch files or who want to use it for testing. It is located in the vConverter installation folder. The format of calling *vccli.exe* is:

```
vccli.exe <generic CLI Tool command line parameters>
```

The CLI Tool executable connects to a local vConverter License Service using a customer's existing serial number, read from the Windows registry, and decreases the conversion counter of installed the vConverter package. The executable passes its output into a standard console output stream. The CLI Tool executable does not work in auto-trial mode. It requires proper activation.

Note: For the CLI Tool executable to run, it must be placed on the same system as the license service.

Running CLI Tool DLL

The CLI Tool DLL is the extension library used to incorporate the system conversion functionality to third-party products. It is not bound to the internal vConverter license engine. Rather, it is bound to the name of main executable file (returned by *GetModuleFileName()* Win32 API call). It fails when the name does not match the initial name hardcoded within the DLL in a crypted form.

These functions are exported by the CLI Tool DLL:

SetCallback(void * pfunc)	Sets the callback pointer to receive progress notifications. Progress notification string format is described below.
Convert(LPCWSTR *Arguments*)	Kicks off the conversion. *Arguments* are generic CLI Tool command line parameters.
BreakConversion(void)	Immediately breaks the currently run conversion.

The callback function prototype supplied in SetCallback() is defined as:

```
typedef void (__stdcall *PCallback)(LPCWSTR statusMessage);
```

statusMessage is a pointer to locally allocated wide char string buffer that contains the status string in a brief or full (human-readable) format, depending on passed command line parameters. The caller application *m*ust copy this string into its local buffer for further usage and must not refer to the passed string address after returning from the callback function call.

Generic CLI Tool Parameters

The CLI Tool—both .EXE and .DLL—requires the following command line:

```
<source system name or IP address> <credentials to login to the source system> [<target server address>] <target file name in UNC format> [<credentials to login to the target server>] <capturing parameters> [<extra parameters>]
```

The mandatory CLI parameters are:

- source system name with valid administrative credentials
- target filename (where the output image data will be written)
- capturing parameters

You can specify a login and password for the target server if, for example, the target share is not generally accessible, you want to launch Windows TSA there, or you want to capture to ESX Servers.

Some migration parameters can be used to improve performance and reliability. Several examples of CLI Tool command line usage follow.

Example 1: Conversion to Windows Target Folder using Windows TSA and flat VMDK File Format

You have these input parameters for the conversion:

Name	**Value**
Source Server Name	fileserv
Source Server User Login	admin
Source Server User Password	123456
Target Server Name	storage
Target Disk Image Path	`\\storage\vm\fileserv.vmdk`
Target Server User Login	admin
Target Server User Password	123456
Volumes to Convert	C: D:
Image format	VMware VMDK flat
Run Windows Server Agent if possible	yes

Run CLI Tool with the following command line:

```
fileserv /su admin /sp 123456 /tserver storage
\\storage\vm\fileserv.vmdk /tu admin /tp 123456 /vm vmware
/adapter ide /vol c: /vol d: /flat /winsftp
```

This converts the system *fileserv* to the image *storage**vm**fileserv.vmdk* into VMware IDE disk file format. The volume C: will be put into a primary partition; the volume D: will be written as a logical disk in the extended partition. All the files necessary for system conversion must be located inside the source system, otherwise the conversion will fail.

To run Windows TSA you must provide the proper target server credentials, even if they match those of the source server. In this example, there are two similar credentials—one for the source, the other for the target.

Note: If running Windows TSA fails, the conversion will continue trying to write to the target shared folder using the native Windows file write operations.

Example 2: Conversion of a System Passing Setup Folder

If you convert the same system from example 1, but some files that are necessary for conversion are missing from the source. You will have to add this parameter:

Name	Value
Setup folder location	\\install\os\windows2000\sp

The command line is:

```
fileserv /su admin /sp 123456 /tserver storage
\\storage\vm\fileserv.vmdk /tu admin /tp 123456 /vm vmware
/adapter ide /vol c: /vol d: /flat /winsftp /setup
\\install\os\windows2000\sp4
```

It performs the same conversion, but the missing files are searched for within this folder: \\install\os\windows2000\sp4.

Example 3: Conversion of a System to ESX Server Saving Tools Log Files

If you convert the same system from the examples above to ESX Server, these parameters apply:

Name	Value
Source Server Name	fileserv
Source Server User Login	admin
Source Server User Password	123456

Name	Value
Target Server Name (IP address)	esxserver
Target Disk Image Path	`/vmfs/volumes/storage1/C.vmdk`
Target ESX Server Agent User Login	root
Target ESX Server Agent User Password	vmware
Volumes to Convert	C: D:
Image format	VMware VMDK flat
Folder to store log files from the tools	C:\logs

The command line is:

```
fileserv /su admin /sp 123456 /tu root /tp vmware /tserver
esxserver: 422 "/vmfs/volumes/storage1/C.vmdk" /vm
vmwareesx /adapter lsi /vol C: /flat /vo /extlogs "C:\logs"
```

It converts the system *fileserv* to the image */vmfs/volumes/storage1/C.vmdk* on the ESX Server. The intermediate log files of all vConverter tools are saved in the *c:\logs* folder.

Options	Required		Description
	Output to Windows shared folders	Output to ESX Server	
Generic Parameters			
/?, /help	-		Displays brief tool usage instructions.
<source system name or IP address>	+		Specifies the source system name or IP address.
/su <user name>	+		Specifies the user name for the launch capturing process on a source system. The user must have administrator access rights.
/sp <password>	-		Specifies the password for the user supplied in /su parameter.
/tserver <server name or IP address[:port]>	-/+	+	Specifies the target server and optional port number for connecting to the TSA running. Use this parameter to convert a system to ESX Server or a network share folder through the Windows TSA.
<target file name in UNC format>	+		Specifies output image filename. UNC format - \\computer name\sharename\.. – must be used here. ESX Server format - "/folder/subfolder/../filename.vmdk".
/tu <user name>	-	+	Specifies the user name to get access to a target share on a target system, or to connect to TSA. Provide this parameter if the administrative credentials are different for the source and target systems and the target share does not have unrestricted access. For example, use this parameter when the source and target systems reside in the different domains. You must specify this parameter if you are writing to ESX Server or a network share folder through TSA.
/tp <password>	-	+	Specifies the password for the user supplied in /tu parameter.
Capturing Parameters			

Options	Required		Description
	Output to Windows shared folders	Output to ESX Server	
/vm vpc| vmware| legacyvmware| virtualiron| vmwareesx	+	+	Specifies target VM: • vpc—Virtual PC (vhd file) • vmware—VMware Workstation 4.x and higher, and Server (vdmk file) • legacyvmware—older version of VMware Workstation • virtualiron—Virtual Iron • vmwareesx—Vmware ESX Server 3.x
/split	-	-	Turns on image files splitting. For VMware: • maximum file size is set to 2Gb • produced file type is either twoGbMaxExtentSparse or twoGbMaxExtentFlat [**Error! Reference source not found.**] For Virtual PC: • maximum file size is set to 4Gb • produced file type is either Dynamic Hard Disk Image (Split) or FixedHard Disk Image (Split) [**Error! Reference source not found.**]
/flat	-	-	Forces tool to allocate all space for the image at time of creation. In this case, image size will match disk size roughly. If not specified, a sparse image is created (monolithicSparse, twoGbMaxExtentSparse, Dynamic Hard Disk Image, Dynamic Hard Disk Image (Split)).
/adapter ide|bus|lsi|adaptec	+	+	Defines disk adapter type (* this value is applied for both capturing and migration steps). For VMware, valid values are:

Options	Required		Description
	Output to Windows shared folders	Output to ESX Server	
			• ide—IDE adapter • bus—Bus Logic SCSI adapter • lsi—LSI Logic SCSI adapter For Microsoft products, valid values are: • ide—IDE adapter • adaptec—Adaptec SCSI adapter (Can be used only in Virtual Server.)
/vol <name> [/resize <size>]	+	+	Adds a volume to the list of volumes to capture. <name> - volume name (e.g., C:). /resize option allows to specify new size of the volume in megabytes (Mb suffix) or Gigabytes (Gb suffix). New volume size must be greater than the current volume size. /vol option can be repeated several times. The first volume in the list will be captured as a primary partition; the remaining volumes will be captured as logical drives inside an extended partition. Example: /vol c: /resize 20Gb /vol d: /vol e: /resize 120Mb These options specify that c:, d:, and e: volumes are to be captured. Volumes c: and e: new sizes are 20Gb and 120Mb, respectively.
Extra Parameters			

Options	Required		Description
	Output to Windows shared folders	Output to ESX Server	
/setup <path>	-	-	Specifies the path to Windows setup files. Used when not all files necessary for kernel migration are found on source—for instance, when the source was optimized before and the system file cache was cleaned up manually or using a program. If there is more than one operational system to migrate, and it is necessary to specify different setup folder locations for each, use *volsetup* instead.
/volsetup <volume> <path>	-	-	Indicates the path to Windows setup files for the specified source volume. The meaning is the same as for setup parameter.
/mcache <path>	-	-	Specifies the path to store and retrieve Migration Cache, which is used to speed up the subsequent conversions of the same system or systems with the same OS and SP installed. In this case, the following kernel migrations can use the files used by the first migration, and do not scan Setup Folder again, which may take a significant amount of time.
/vo	-	-	Turns on verbose (human readable) output mode. By default, brief output format is used. Can be useful for testing purposes.
/rr <interval in milliseconds>	-	-	Refresh rate interval between two progress indicator messages (see below).
/log <filename>	-	-	Explicitly specifies the file name for the brief log written by the tool itself. If this parameter is not specified, the log is stored in the same folder where the tool is located and named with the same name as the tool and .log extension.
/extlogs <folder>	-	-	Specifies the folder path where detailed log files from the tools must be put. If the parameter is not specified, all original vConverter tools logs are purged. If this

Options	Required		Description
	Output to Windows shared folders	Output to ESX Server	
			parameter is specified, the brief tool log is also put into this folder.
/nokernel	-	-	Turns off kernel migration step. Applicable only for V2V migrations to the same target platform with the same HAL parameters. Warning: Otherwise, may cause blue screen.
/nodisk	-	-	Turns off copying drivers and registry entry modifications on the disk adapter migration step. Applicable only for V2V migrations to the same target platform with the same disk adapter type. Warning: Otherwise may cause blue screen. Passing this parameter does not exclude disk migration step—several migration activities cannot be turned off.
/installVmTools	-		Installs VMware tools after first boot of the migrated system.
/autoLogon	-		Sets logon mode without typing credentials on the first boot. For auto logon, the credentials from /su /sp command line parameters are used.
/badsectors	-		Defines bad sectors strategy. Valid values are: • fail—Failed migration process if bad sectors are found. • skip—Skip all bad sectors.
/winsftp	-		Use Windows SFTP agent, if set. Required /tserver, /tu, tp.
/novss	-		Disable VSS usage on supported systems. The built-in Consistency Driver is used instead.

Options	Required		Description
	Output to Windows shared folders	Output to ESX Server	
/byfile	-		Forces Capture Tool to use by-file capturing mode, instead of by-sector by default. Must be used only for source systems with VSS support enabled—Windows XP and higher (Windows Server 2003 is best.). For older systems, will cause conversion to fail.

CLI Tool Exit Codes

The CLI Tool returns these exit codes:

Code	Description
0	No error, normal exiting.
1	Invalid command line.
10	No more licenses are available.
11	Internal license error.
30	Execution is cancelled by the user.
40	Unexpected or unknown conversion error (need to analyze log files).
100	Capture Tool: Failed to connect to source system.
101	Capture Tool: Failed to copy the executable files to a source system.
102	Capture Tool: Failed to create directory on a source system.
103	Capture Tool: Failed to open service manager on a source system.
104	Capture Tool: Failed to create or open service on a source system.
105	Capture Tool: Failed to start remote service on a source system.
106	Capture Tool: Failed to query remote service state on a source system.
107	Capture Tool: Remote service run failed on a source system.
108	Capture Tool: Remote process is already launched on a source system.
109	Capture Tool: Remote service logon failure on a source system.
110	Capture Tool: Unexpected capturing error.
200	Migration Tool: Bad Setup installation folder.
201	Migration Tool: Failed to copy system file (DLL) upon migrating.
202	Migration Tool: Unsupported OS to migrate.
203	Migration Tool: Failed to mount registry hive.
204	Migration Tool: Failed to copy driver file.
205	Migration Tool: Failed to load registry file.
206	Migration Tool: Failed to uninstall hotfixes.
207	Migration Tool: Unexpected migration error.
300	Capture Tool: Failed to get access to a source volume/disk to capture.

Code	Description
301	Capture Tool: Failed to create output image file.
302	Capture Tool: Failed to write to output image file.
303	Capture Tool: Failed to read from a source volume.
304	Capture Tool: Failed to extract consistency driver.
305	Capture Tool: Failed to run consistency driver.
306	Capture Tool: Failed to open consistency data file.
307	Capture Tool: Failed to read consistency data file.
308	Capture Tool: Failed to start inspecting disk changes.
309	Capture Tool: Failed to run disk driver.
310	Capture Tool: Failed to mount disk image.
311	Capture Tool: Failed to unmount disk image.
312	Capture Tool: Failed to extend the volume.
313	Capture Tool: License limits are not kept.
314	Capture Tool: Logoff or shutdown request received. Capture Tool execution is finished prematurely.
315	Capture Tool: Different Virtual Disk driver version is already loaded on the system. Need to reboot source system to start capturing.
316	Capture Tool: Unexpected capture error.
500	Failed to get partition info from source system.
501	Failed to get boot disk info from source system.
502	Failed to load disk driver.
503	Failed to copy system files on migrated system.
504	Failed to mount disk image to perform system migration step.
505	VMware drivers folder is missing or empty—can’t perform disk migration step.

Brief CLI Tool Output Messages

Brief tool output mode is intended for the further parsing by a caller application. All the tool output messages in this mode are represented in the following format:

<Type Prefix><Variable part>

Type Prefix is one character with a value from the following set:

• s—This is a new step message.

• %—This is a progress indicator message.

• v—This is a version information message.

Variable part is specific to different types. See the table below for these values.

Type Prefix	Variable part	Description
s	N (a decimal number)	A next convert stage encoded by N has just begun.
%	NP*10 (a whole decimal number – the actual percent value 0..100% multiplied by 10)	The execution percent of the current operation is specified here.
v	X.X.X.X	The version of used vConverter tools is shown there. The most significant number is on the left side, the less significant is on the right.

The converting stages are enumerated in the table below:

Stage	Optional	Description
1		Determining the OS version of the source system.
11	Y	Preparing to convert the system—searching for the necessary files to migrate inside the migration cache folder, system, or setup folder.
20		Launching the Capture Tool on a source system.
21		Capture Tool prepares to capture the current partition.
22		Capturing the current source partition.
23		Applying consistency data for the current source partition.
24	Y	Resizing the captured partitions. Note: Applies only to NTFS volumes; FAT32 volumes are resized on the fly.
30	Y	Mounting the captured image to migrate the OS.

31	Y	Starting kernel migration.
32	Y	Starting disk adapter migration.
33	Y	Checking the setup files folder for current migration activity.
34	Y	Running migration.
35	Y	Dismounting the captured image.
40	Y	Gathering the log files and cleanup temporary data.

Each next message is started from the new line when using the CLI Tool executable. For CLI DLL, each next message is delivered in a separate callback function call:

```
> clitool.exe fileserv /su admin /sp 123456
\\storage\vm\fileserv.vmdk /tu admin /tp 123456 /vm vmware
/adapter ide /vol c: /setup \\install\os\windows2000\sp4
```

```
v2007.1.57.0
s1
%0
%166
%332
%498
%664
%830
%1000
s11
%0
%500
%1000
s20
s21
s22
%1
%3
%4
%6
%7
%8
%15
%16
%17
%20

..

%998
%999
%1000
s23
%7
%37
```

```
%229

..

%992
%996
%1000
s24
%1000
s30
s31
%1000
s34
%900
%1000
s32
%1000
s34
s35
s40
%0
%500
%1000
```

>

A conversion result is not displayed in brief mode. The caller application has to analyze the exit code of the CLI Tool. If a step is reported as started, but there is no percentage message for the step, and the next step is started immediately, then the prior step passed. A next progress indicator message is displayed only when the progress value was actually changed. The default refresh rate value is 100ms; this value may be changed from the command line.

GUI Features Not Supported by vConverter CLI

The CLI Tool does not support:

- Explicit specification of HAL type for kernel migration. The best option is automatically applied.
- Capturing the whole source disk in RAW mode. Each source volume must be specified in the command line.
- Capturing volumes in separate disk images. Through CLI, a single output image file is created for all source volumes.
- Creating VM descriptor files (e.g., .VMX, .VMC).
- Automatic installation of VMware Tools into a target image. The tool schedules the installation on the first run; you must power on the VM to finish installing VMware Tools.
- Installation of VMware Tools for ESX Server. It uses the same version for both desktop and server VMware platforms, so running on an ESX VM will be displayed with an obsolete VMware Tools version.
- Installation of ESX TSA. The target server must be configured properly before use, either by manual installation or by adding the server.
- Writing to ESX or Xen using VA.

CLI Tool DLL Package

The CLI Tool package includes these files and folders:

Filename	**Description**
cli.dll	Core Command Line Interface DLL
invsrl.exe	Remote Launch Tool
invsvd.sys	Virtual Disk Image Driver
invsvd_x64.sys	Virtual Disk Image Driver (64bit version)
invVss51.dll	VSS support library for Windows XP
invVss52.dll	VSS support library for Windows Server 2003
invVss60.dll	VSS support library for Windows Vista
ntfsresize.exe	NTFS Resize Utility
vcarcinfo.exe	System Information Tool
vcct.exe	Capture Tool

vcmt.exe	Migration Tool
winagent.exe	Windows TSA
.\migration support\VMware	Folder contains necessary files for migrating to VMware platform. Contains the files listed below.
SYMMPI.INF, SYMMPI.SYS	LSI Logic SCSI driver
VMSCSI.INF, VMSCSI.SYS	Bus Logic SCSI driver
vmtls.cab	VMware Tools package for desktop VMware target platforms.

CLI Troubleshooting

When requesting help troubleshooting an issue, it is important to provide log files of the CLI Tool and accompanying vConverter tools. By default, CLI Tool writes its own log file, if it has been run as a standalone executable; or by the caller executable, if it has been used in a .DLL form. In the last case, the log file name of CLI Tool consists of the name of the caller application plus a .log extension. This is the best approach for requesting support:

1. Create a temporary folder.
2. Supply the full path to this folder in */extlogs* parameter while running the conversion.
3. After finishing the conversion, save all of the content of this folder to a zip file and email it to Vizioncore Support.
4. Remove the folder.

6 Appendix

Troubleshooting

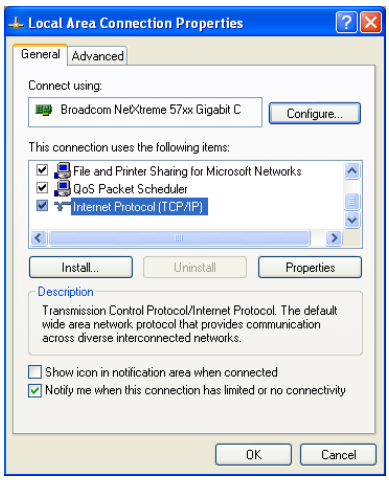
This section contains some suggestions for addressing issues that you might encounter while using vConverter.

Server IP Address Can't Be Resolved

If you have not added a DNS entry to correspond to the IP address that you intend to use in vConverter, a message will display when you attempt to install an ESX Server.

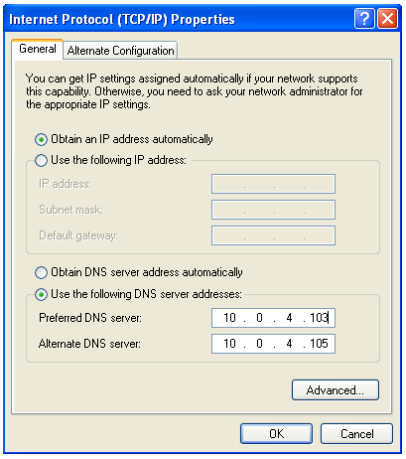
Set DNS Servers

1. To set the DNS entry, access **Control Panel→Network Connections.**
2. Right-click the LAN you are using and select **Properties.**
3. From the list of items that this connection uses, click to highlight **IP Protocol (TCP/IP)** and click **Properties.**



4. Confirm that the **Use the following DNS server addresses** radio button is selected.

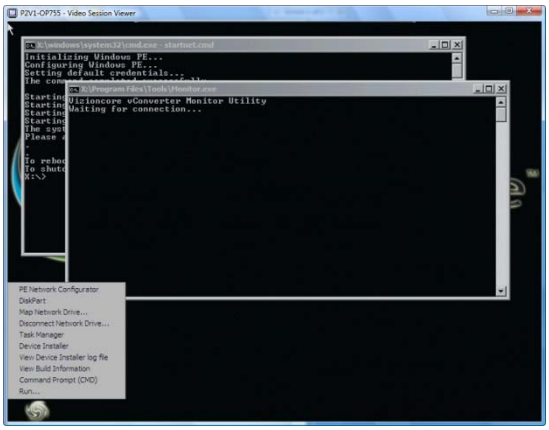
5. Enter the DNS you intend to use in the Preferred DNS server field.



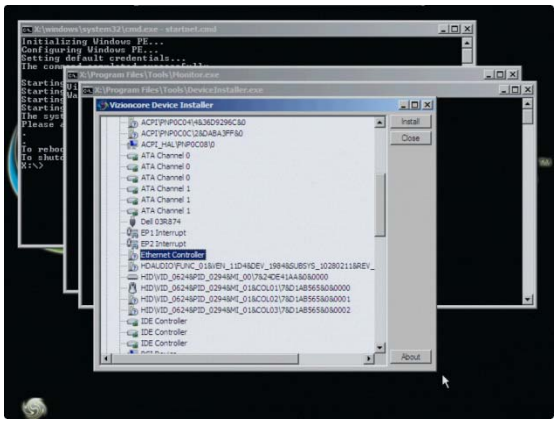
6. Click **OK.**
7. On the Local Area Connection Properties dialog, click **Close.**

Manually Install a NIC Device to Work with VistaPE

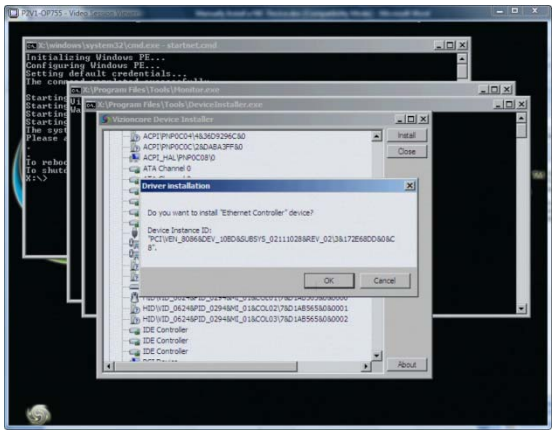
1. After VistaPE boots, insert the floppy/CD with the network driver. If the driver is on the host's hard disk, skip this step.
2. Select **Start→Device Installer.**



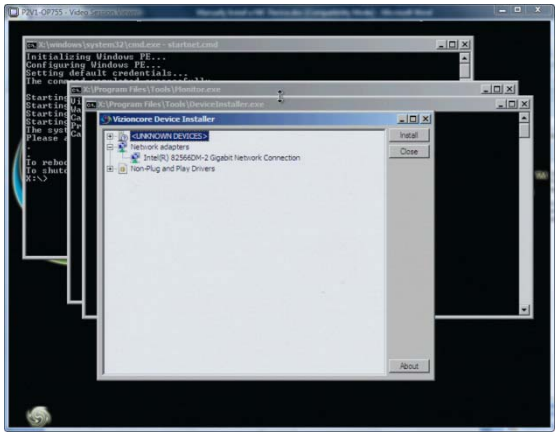
3. Select the ethernet adapter in <Network adapters> or <UNCKNOWN DEVICE> group. Click **Install.**



4. Click **OK.**



5. Specify path to the driver.



6. Click **Close.**
7. Select **Start→PE Network Configurator.**

   Note: If this process fails, then you are using a driver that is incompatible with VistaPE. See the *Drivers* section of this Appendix for a list of compatible drivers.

Hot Cloning

During the hot cloning process, no source machine reboot is necessary. Although it is fine to allow all necessary applications to run during this process, it is best to close those that are unnecessary and to shut down any extra services that are running. You can use the service control feature through Advanced Properties→Migration→Service Manager.

Failed to Get Remote Resources

This means that the client cannot contact the source. To resolve this, navigate to C:\Program Files\Vizioncore\vConverter\Bin\Support and follow these steps:

1. Open Machines.txt and remove any entries.
2. Enter the name of the source that is causing the problem.
3. Run the file called check.vbs (included in this folder as well).

- This will generate a WMI.log. If your log reads failed to connect this, it is usually a result of permissions or DNS issues.
- From the client, go to a command prompt and try to ping the source system by name. Try pinging by IP address. If you have access to the DNS server for the domain, be sure that the machine is registered in the correct DNS domain. If you do not have access to the DNS server and are still having problems pinging the machine, try to ping the fully qualified domain name (FQDN) For example, if the machine is named "SEC06" and it is located in a child domain named "DZ", trying to ping the machine by its FQDN "SEC06.DZ". If you can ping the FQDN and you cannot access your DNS server, try entering the FQDN into your local hosts file. To do so, access Start→Run and type: notepad %windir%\system32\drivers\etc\hosts).
- For hosts enter your machine's IP address; click Tab and enter the FQDN; click Tab; and enter the machine name (e.g., 10.10.0.11 sec06.dz sec06). Save the file and exit notepad.
- Go back to a command prompt and ping the machine name and the FQDN. You will be able to go to vConverter and complete the conversion.

Failure to Create Directory

If you receive an error message indicating a failure to create a directory on the remote host, follow the directions in the *Change Login Credentials* section in Chapter 3. Input the correct credentials and then drag the source to the source server hotspot in the Conversion Tasks pane.

Create Flat Disk Image

Enabling the Create Flat Disk Image option (through the Disks tab on the Advanced Properties window) can slow down the conversion process. Select this option only if you need it—for example, if you intend to resize volumes using the vConverter Wizard.

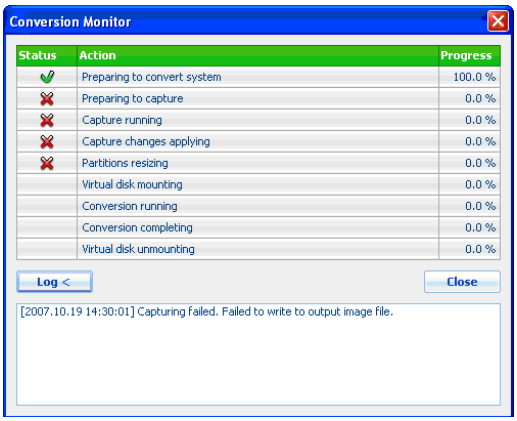
Target VM Unavailable

If the target VM is not available during a synchronization, the process will be stopped. The next synchronization will occur during the next scheduled timeslot. If the target VM is powered on between the synchronizations, all file system changes will be lost except for the newly added files. These files are no longer on the source, but they do remain on the target image.

Conversion Job Monitoring

1. After starting a conversion job, the button below will display. Use it to access the Conversion Monitor window, which will provide real-time updates on job progress.

2. Click **OK,** and then click **Monitor** in the bottom right corner of the vConverter window.
3. Next, click **Log** on the Conversion Monitor window. The log includes text that describes the error.



Drivers

These tables list all of the drivers that are compatible with VistaPE.

Manufacturer	Device
SiS	SiS 900-Based PCI Fast Ethernet Adapter
SiS	SiS 900-Based PCI Fast Ethernet Adapter
SiS	SiS 900 PCI Fast Ethernet Adapter
SiS	SiS 900 PCI Fast Ethernet Adapter
IBM	Integrated 10/100 Ethernet Controller
IBM	Integrated 10/100 Ethernet Controller
IBM	IBM 10/100 EtherJet PCI Adapter
IBM	IBM Netfinity 10/100 Ethernet Adapter
IBM	IBM 10/100 EtherJet Integrated LAN with Alert on LAN
IBM	IBM Netfinity 10/100 Ethernet Security Adapter 2
IBM	IBM 10/100 EtherJet PCI Management Adapter
IBM	IBM 10/100 EtherJet PCI Adapter with Alert on LAN
IBM	IBM 10/100 EtherJet Secure Management Adapter
IBM	IBM Netfinity 10/100 Ethernet Security Adapter
IBM	Intel(R) PRO/100 S Network Connection
IBM	IBM 10/100 Dual Port Server Adapter
IBM	Intel(R) PRO/100 VE Desktop Connection
IBM	IBM iSeries 2892 10/100 Ethernet Port
IBM	Intel(R) PRO/100 VE Network Connection
IBM	IBM 10/100 NetFinity Fault ToleraNT Adapter
IBM	IBM iSeries 10/100 adapter
SONY	SiS 900 PCI Fast Ethernet Adapter
SONY	SiS 900 PCI Fast Ethernet Adapter
Microsoft	Microsoft Tun Miniport Adapter
Microsoft	Microsoft ISATAP Adapter
Microsoft	Microsoft 6to4 Adapter
Microsoft	Microsoft Direct Point-to-point Adapater
Microsoft	Microsoft Loopback Adapter
Microsoft	Microsoft(R) USB Adapter MN-110
Microsoft	Microsoft(R) Notebook Adapter MN-120
Microsoft	Microsoft(R) PCI Adapter MN-130
Microsoft	Bluetooth Device (Personal Area Network)
Microsoft	Bluetooth Device (RFCOMM Protocol TDI)
Microsoft	RAS Async Adapter
Microsoft	Infrared Port
Microsoft	Infrared Modem Port
Microsoft	WAN Miniport (L2TP)
Microsoft	WAN Miniport (PPTP)
Microsoft	WAN Miniport (AppleTalk)
Microsoft	WAN Miniport (Network Monitor)
Microsoft	WAN Miniport (IP)
Microsoft	WAN Miniport (IPv6)
Microsoft	WAN Miniport (IPX)
Microsoft	WAN Miniport (NetBEUI, Dial In)
Microsoft	WAN Miniport (NetBEUI, Dial Out)
Microsoft	WAN Miniport (PPPOE)
Amertek	Amertek C110TX PCI Fast Ethernet Adapter
VIA Technologies, Inc.	VIA Rhine III Compatible Management Adapter
VIA Technologies, Inc.	VIA Rhine III Compatible Fast Ethernet Adapter
VIA Technologies, Inc.	VIA Rhine II Compatible Fast Ethernet Adapter

Manufacturer	Device
VIA Technologies, Inc.	VIA VT86C100A Rhine Compatible Fast Ethernet Adapter
VIA Technologies, Inc.	VIA Rhine III Management Adapter
VIA Technologies, Inc.	VIA Rhine III Management Adapter
VIA Technologies, Inc.	VIA Rhine III Fast Ethernet Adapter
VIA Technologies, Inc.	VIA Rhine III Fast Ethernet Adapter
VIA Technologies, Inc.	VIA Rhine II Fast Ethernet Adapter
VIA Technologies, Inc.	VIA Rhine II Fast Ethernet Adapter
VIA Technologies, Inc.	VIA VT86C100A Rhine Fast Ethernet Adapter
VIA Technologies, Inc.	VIA VT86C100A Rhine Fast Ethernet Adapter
D-Link	D-Link DFE-538TX PCI Fast Ethernet Adapter
D-Link	D-Link DFE-530TX+ PCI Fast Ethernet Adapter (rev.F)
D-Link	D-Link DFE-530TX+ PCI Fast Ethernet Adapter (rev.F)
D-Link	D-Link DFE-520TX PCI Fast Ethernet Adapter
D-Link	D-Link DFE-520TX PCI Fast Ethernet Adapter
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.D)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.D)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.C)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.C)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.B)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.B)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.A)
D-Link	D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.A)
D-Link	Intel(R) PRO/100 VE Adapter
D-Link	D-Link DE-530+ PCI Ethernet Adapter
D-Link	D-Link DFE-500TX PCI Fast Ethernet Adapter (Rev B/C)
D-Link	D-Link DFE-500TX PCI Fast Ethernet Adapter (Rev D)
D-Link	D-Link DFE-500TX PCI Fast Ethernet Adapter (Rev E)
D-Link	D-Link DFE-550TX FAST Ethernet 10/100 Adapter
D-Link	D-Link DFE-580TX 4 Port Server Adapter
D-Link	D-Link DL10050 based 10/100 Adapter
D-Link	D-Link DGE-500SX Giga-Ether Adapter
D-Link	D-Link DGE-550SX Gigabit Ethernet Adapter
D-Link	D-Link DGE-550T Gigabit Ethernet Adapter
D-Link	D-Link DL2000-based Gigabit Ethernet Adapter (generic)
D-Link	D-Link DGE-530T Gigabit Ethernet Adapter
Corega K.K.	corega FEther PCI-TXL Ethernet Adapter
Corega K.K.	corega FEther PCI-TXM Ethernet Adapter
Corega K.K.	corega FastEther II PCI-TX Ethernet Adapter
corega K.K.	corega GEther PCI-T32
corega K.K.	corega FEther USB2-TX
corega K.K.	corega FEther USB-TXS
corega K.K.	corega FEtherII PCC-TXD LAN Card
ELECOM	Laneed LD-10/100AWL Fast Ethernet Adapter
ELECOM	Laneed LD-10/100AL PCI Fast Ethernet Adapter (rev.B)
ELECOM	Laneed LD-10/100AL PCI Fast Ethernet Adapter (rev.A)
Digitalchina/D-Link	Digitalchina/D-Link DFE-530TX PCI Fast Ethernet Adapter (rev.B)
I-O DATA DEVICE, INC.	I-O DATA ET100-PCI-S Fast Ethernet Adapter
PLANEX COMMUNICATIONS INC.	Planex FNW-9702-T Fast Ethernet Adapter
PLANEX COMMUNICATIONS INC.	Planex FNW-9700-T Fast Ethernet Adapter
CNet Technology Inc.	CNet 10/100 Mbps PCI Wake On LAN Fast Ethernet Adapter
CNet Technology Inc.	CNet 10/100 Mbps PCI Fast Ethernet Adapter
EDIMAX	EDIMAX EN-9150 SERIES PCI Fast Ethernet Adapter
GIGA-BYTE TECHNOLOGY CO.,	GN-FE605 Fast Ethernet Adapter

Manufacturer	Device
LTD	
GIGA-BYTE TECHNOLOGY CO., LTD	GN-FE605M Management Ethernet Adapter
The Linksys Group Inc.	EtherFast 10/100 Managed Network Adapter
The Linksys Group Inc.	EtherFast 10/100 Managed Network Adapter
Intel	Intel(R) PRO/1000 PT Dual Port Network Connection
Intel	Intel(R) PRO/1000 PT Dual Port Server Connection
Intel	Intel(R) PRO/1000 PT Dual Port Server Adapter
Intel	Intel(R) PRO/1000 PF Dual Port Server Adapter
Intel	Intel(R) PRO/1000 PB Dual Port Server Connection
Intel	Intel(R) PRO/1000 PT Server Adapter
Intel	Intel(R) PRO/1000 PT Network Connection
Intel	Intel(R) PRO/1000 PF Server Adapter
Intel	Intel(R) PRO/1000 PF Network Connection
Intel	Intel(R) PRO/1000 PB Server Connection
Intel	Intel(R) PRO/1000 PM Network Connection
Intel	Intel(R) PRO/1000 PL Network Connection
Intel	Intel(R) PRO/1000 EB Network Connection with I/O Acceleration
Intel	Intel(R) PRO/1000 EB Backplane Connection with I/O Acceleration
Intel	Intel(R) 82566MM Gigabit Platform LAN Connect
Intel	Intel(R) 82566DM Gigabit Platform LAN Connect
Intel	Intel(R) 82566DC Gigabit Platform LAN Connect
Intel	Intel(R) 82562V 10/100 Platform LAN Connect
Intel	Intel(R) 82566MC Gigabit Platform LAN Connect
Intel	Intel(R) PRO/1000 PT Desktop Adapter
Intel	Intel(R) PRO/1000 EB1 Network Connection with I/O Acceleration
Intel	Intel(R) PRO/1000 EB1 Backplane Connection with I/O Acceleration
Intel	Intel(R) PRO/1000 PT Quad Port Server Adapter
Intel	Intel(R) PRO/1000 XT Server Adapter
Intel	Intel(R) PRO/1000 XT Desktop Adapter
Intel	iSeries 1000/100/10 Ethernet Adapter
Intel	Intel(R) PRO/1000 XT Network Connection
Intel	Intel(R) PRO/1000 XF Server Adapter
Intel	iSeries Gigabit Ethernet Adapter
Intel	Intel(R) PRO/1000 XF Network Connection
Intel	Intel(R) 82544GC Based Network Connection
Intel	Intel(R) PRO/1000 T Desktop Adapter
Intel	Intel(R) PRO/1000 T Network Connection
Intel	Intel(R) PRO/1000 MT Desktop Adapter
Intel	Intel(R) PRO/1000 MT Network Connection
Intel	Intel(R) PRO/1000 MT Mobile Connection
Intel	Intel(R) PRO/1000 MT Server Adapter
Intel	Intel(R) PRO/1000 MF Server Adapter
Intel	Intel(R) PRO/1000 MF Server Adapter (LX)
Intel	Intel(R) PRO/1000 MT Dual Port Server Adapter
Intel	Intel(R) PRO/1000 MT Dual Port Network Connection
Intel	Intel(R) PRO/1000 MF Dual Port Server Adapter
Intel	Intel(R) PRO/1000 MF Dual Port Network Connection
Intel	Intel(R) PRO/1000 MT Desktop Connection
Intel	Intel(R) PRO/1000 MT Network Adapter
Intel	Intel(R) PRO/1000 CT Network Connection
Intel	Intel(R) PRO/1000 CT Desktop Connection
Intel	Intel(R) PRO/1000 MT Quad Port Server Adapter
Intel	Intel(R) PRO/1000 MT Quad Port Network Connection

Manufacturer	Device
Intel	Intel(R) PRO/1000 MT Server Connection
Intel	Intel(R) PRO/1000 GT Server Adapter
Intel	Intel(R) PRO/1000 MF Server Adapter(LX)
Intel	Intel(R) PRO/1000 MB Server Connection
Intel	Intel(R) PRO/1000 GT Dual Port Server Adapter
Intel	Intel(R) PRO/1000 MB Dual Port Server Connection
Intel	Intel(R) PRO/1000 GT Desktop Adapter
Intel	Intel(R) PRO/1000 P Dual Port Server Adapter
Intel	Intel(R) PRO/1000 GT Quad Port Server Adapter
Intel	Intel 21140-Based PCI Fast Ethernet Adapter (Emulated)
Intel	Intel(R) PRO/100+ PCI Adapter
Intel	Intel(R) PRO/100+ PCI Adapter
Intel	Intel(R) PRO/100+ PCI Adapter
Intel	Intel(R) PRO/100+ Management Adapter
Intel	Intel(R) PRO/100+ Management Adapter
Intel	Intel(R) PRO/100+ Alert On LAN 2* Adapter
Intel	Intel(R) PRO/100+ Management Adapter with Alert On LAN*
Intel	Intel(R) PRO/100 Desktop Adapter
Intel	Intel(R) PRO/100 Desktop Adapter
Intel	Intel(R) PRO/100 S Management Adapter
Intel	Intel(R) PRO/100 S Management Adapter
Intel	Intel(R) PRO/100 S Advanced Management Adapter
Intel	Intel(R) PRO/100+ Management Adapter with Alert On LAN* GC
Intel	Intel(R) PRO/100 S Desktop Adapter
Intel	Intel(R) PRO/100 S Desktop Adapter
Intel	Intel(R) PRO/100+ Server Adapter (PILA8470B)
Intel	Intel(R) PRO/100 S Server Adapter
Intel	Intel(R) PRO/100 S Server Adapter
Intel	Intel(R) PRO/100+ Dual Port Server Adapter
Intel	Intel(R) PRO/100+ Management Adapter with Alert On LAN* G Server
Intel	Intel(R) PRO/100 Server Adapter
Intel	Intel(R) PRO/100 Server Adapter
Intel	Intel(R) 82559 Fast Ethernet LAN on Motherboard
Intel	Intel(R) 82559 Fast Ethernet LAN On Motherboard
Intel	Intel(R) 82559 Fast Ethernet LOM with Basic Alert on LAN*
Intel	Intel(R) 82559 Fast Ethernet LOM with Alert on LAN 2*
Intel	Intel(R) PRO/100 S Network Connection
Intel	Intel(R) PRO/100 S Network Connection
Intel	Intel(R) PRO/100 Network Connection
Intel	Intel(R) PRO/100 Network Connection
Intel	Intel(R) PRO/100 Network Connection
Intel	Intel(R) PRO/100 M Desktop Adapter
Intel	Intel(R) PRO/100 M Desktop Adapter
Intel	Intel(R) PRO/100 Dual Port Server Adapter
Intel	Intel(R) PRO/100 S Dual Port Server Adapter
Intel	Intel(R) PRO/100 S Dual Port Server Adapter
Intel	Intel(R) PRO/100 M Mobile Network Connection
Intel	Intel(R) PRO/100 VE Desktop Adapter
Intel	Intel(R) PRO/100 VM Desktop Adapter
Intel	Intel(R) PRO/100 VM Desktop Adapter
Intel	Intel(R) PRO/100 VE Network Connection
Intel	Intel(R) PRO/100 VE Network Connection
Intel	Intel(R) PRO/100 VM Network Connection
Intel	Intel(R) PRO/100 VM Network Connection

Manufacturer	Device
Intel	Intel(R) PRO/100 P Mobile Combo Adapter
Intel	Intel(R) PRO/100 P Mobile Adapter
Intel	Intel(R) 82562 based Fast Ethernet Connection
Intel	Intel(R) 82562 based Fast Ethernet Connection
Intel	Intel 21040 Based PCI Ethernet Adapter
Intel	Intel 21041 Based PCI Ethernet Adapter
Intel	Intel 21140 Based PCI Fast Ethernet Adapter
Intel	Intel 21143 Based PCI Fast Ethernet Adapter
Intel	82562EH based Phoneline Desktop Adapter
Intel	Intel(R) PRO/10+ PCI Adapter
Intel	Intel(R) PRO/100B PCI Adapter (TX)
Intel	Intel(R) PRO/100B PCI Adapter (T4)
Intel	Intel(R) PRO/100 WfM PCI Adapter
Intel	Intel 82557-based Integrated Ethernet PCI (10/100)
Intel	82557-based Integrated Ethernet with Wake on LAN
Intel	Intel 82558-based Integrated Ethernet
Intel	Intel 82558-based Integrated Ethernet with Wake on LAN
Intel	Intel(R) PRO/100+ Server Adapter
Intel	Intel(R) PRO/100 VE Desktop Connection
Intel	iSeries 2892 10/100 Ethernet Port
Intel	Intel(R) PRO/100 S+ Desktop Adapter
Intel	Intel(R) PRO/100 S+ Server Adapter
Intel	Intel(R) 82559 Fast Ethernet LOM with Alert on LAN*
Intel	Intel(R) 82559 Fast Ethernet LOM with Alert on LAN* 2
Intel	Intel(R) PRO/100 S Mobile LAN on Motherboard
Intel	NetServer 10/100TX PCI LAN Adapter
Intel	Intel 8255x-based Fast Ethernet
Intel	Intel(R) PRO/100 M Mobile Connection
Intel	Intel(R) PRO/100 M Network Connection
Intel	Intel(R) 82598EB Multi-Function Network Device
Intel	Intel(R) 10 Gigabit XF SR Dual Port Server Adapter
Intel	Intel(R) 82598EB 10 Gigabit AF Dual Port Network Connection
Intel	Intel(R) 10 Gigabit XF SR Server Adapter
Intel	Intel(R) 82598EB 10 Gigabit AF Network Connection
Intel	Intel(R) 82598EB 10 Gigabit AT CX4 Network Connection
Intel	Intel(R) Advanced Network Services Virtual Adapter
Hewlett Packard	HP NetServer 10/100TX PCI LAN Adapter
NEC	NEC PC-9821X-B06(PCI) or compatible/Intel 82557-based Ethernet
NEC	NEC PK-UG-X006(PCI) or compatible Fast Ethernet Adapter
NEC	NEC 82559-based Fast Ethernet Adapter
NEC	NEC PC-9821NR-B06
NEC	Intel 21143 Based PCI Fast Ethernet Adapter
Acer	ACER NIC-559A PRO/100+ with WOL
Acer	ACER NIC-559A PRO/100+ with Alert On LAN 2*
Acer	ACER T62L158 PRO/100+ with Alert On LAN 2*
Acer	AcerLan ALN-315
Fujitsu Siemens	Fujitsu Siemens Computers 82558-based Onboard Ethernet with WoL
Fujitsu Siemens	Fujitsu Siemens Computers 82559-based Onboard Ethernet with WoL
Fujitsu Siemens	Fujitsu Siemens Computers 82559-based Onboard Ethernet with WoL and AoL
Fujitsu Siemens	Fujitsu Siemens Computers Server Onboard LAN with Intel 82558
Fujitsu Siemens	Fujitsu Siemens Computers Server Onboard LAN with Intel 82559C
Toshiba	Intel 8255x-based PCI Ethernet Adapter (10/100)
Toshiba	Intel(R) PRO/100 VE Network Connection
Toshiba	Toshiba Fast Ethernet PCI LAN Card

Manufacturer	Device
Toshiba	Toshiba Fast Ethernet Cardbus LAN Card
Fujitsu	Intel 8255x-based PCI Ethernet Adapter (10/100)
Fujitsu	Intel(R) PRO/100 VM Network Connection
Samsung	Intel(R) PRO/100 VE Desktop Adapter
Samsung	Intel(R) PRO/100 VE Network Connection
Trigem	Intel(R) PRO/100 VE Network Connection
Dell	Intel 8255x-based PCI Ethernet Adapter (10/100)
Atheros Communications Inc.	Atheros AR5002G Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5002X Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5004G Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5004X Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5005GS Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5005G Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006XS Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006X Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006EXS Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006EX Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006EGS Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006EG Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006GS Wireless Network Adapter
Atheros Communications Inc.	Atheros AR5006G Wireless Network Adapter
Atheros Communications Inc.	Atheros Wireless Network Adapter
Atheros Communications Inc.	IEEE 802.11a/g Wireless LAN Adapter (A)
Atheros Communications Inc.	Linksys Wireless-G Notebook Adapter
Atheros Communications Inc.	Linksys Wireless A+G Notebook Adapter
Atheros Communications Inc.	Cisco Aironet 802.11a/b/g Wireless Adapter
Marvell	Marvell Yukon 88E8001/8003/8010 PCI Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8021 PCI-X IPMI Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8022 PCI-X IPMI Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8061 PCI-E IPMI Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8062 PCI-E IPMI Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8035 PCI-E Fast Ethernet Controller
Marvell	Marvell Yukon 88E8036 PCI-E Fast Ethernet Controller
Marvell	Marvell Yukon 88E8038 PCI-E Fast Ethernet Controller
Marvell	Marvell Yukon 88E8039 PCI-E Fast Ethernet Controller
Marvell	Marvell Yukon 88EC033 PCI-E Fast Ethernet Controller
Marvell	Marvell Yukon 88E8052 PCI-E ASF Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8050 PCI-E ASF Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8053 PCI-E Gigabit Ethernet Controller
Marvell	Gigabit ExpressCard Adapter
Marvell	PLANEX GEX-1000T ExpressCard Gigabit LAN Adapter
Marvell	Marvell Yukon 88E8055 PCI-E Gigabit Ethernet Controller
Marvell	Marvell Yukon 88E8056 PCI-E Gigabit Ethernet Controller
Marvell	Marvell Yukon 88EC036 PCI-E Gigabit Ethernet Controller
Marvell	Marvell Yukon 88EC042 PCI-E Gigabit Ethernet Controller
Marvell	SysKonnect SK-9871 V2.0 Gigabit Ethernet 1000Base-ZX Adapter, PCI64, Fiber ZX/SC
Marvell	SysKonnect SK-9861 V2.0 Gigabit Ethernet 1000Base-SX Adapter, PCI64, Fiber SX/VF-45
Marvell	SysKonnect SK-9851 V2.0 Gigabit Ethernet 1000Base-SX Adapter, PCI64, Fiber SX/MTRJ
Marvell	SysKonnect SK-9843 V2.0 Gigabit Ethernet 1000Base-SX Adapter, PCI64, Fiber SX/SC
Marvell	SysKonnect SK-9841 V2.0 Gigabit Ethernet 1000Base-LX Adapter, PCI64, Fiber LX/SC

Manufacturer	Device
Marvell	SysKonnect SK-9821 V2.0 Gigabit Ethernet 10/100/1000Base-T Adapter, PCI64, Copper RJ-45
Marvell	SysKonnect SK-9521 V2.0 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8012 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8011 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8009 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8008 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8007 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8006 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8004 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8003 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8002 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect Marvell RDK-8001 10/100/1000Base-T Adapter, PCI, Copper RJ-45
Marvell	SysKonnect SK-9C21 10/100/1000Base-T Adapter, ExpressCard
Marvell	SysKonnect SK-9E21D 10/100/1000Base-T Adapter,PCI-Express, Copper RJ-45
Marvell	SysKonnect SK-9E21 10/100/1000Base-T Server Adapter, PCI-Express, Copper RJ-45
Marvell	SysKonnect SK-9E22 10/100/1000Base-T Dual Port Server Adapter, PCI-Express, 2 Copper RJ-45
Marvell	SysKonnect SK-9E81 1000Base-SX Server Adapter,PCI-Express, Fiber SX/LC
Marvell	SysKonnect SK-9E82 1000Base-SX Dual Port Server Adapter, PCI-Express, 2 Fiber SX/LC
Marvell	SysKonnect SK-9E91 1000Base-LX Server Adapter,PCI-Express, Fiber LX/LC
Marvell	SysKonnect SK-9E92 1000Base-LX Dual Port Server Adapter, PCI-Express, 2 Fiber LX/LC
Marvell	SysKonnect SK-9I22 10/100/1000 Base-T Dual Port Express Module
Marvell	SysKonnect SK-9S21 10/100/1000Base-T Server Adapter, PCI-X, Copper RJ-45
Marvell	SysKonnect SK-9S22 10/100/1000Base-T Dual Port Server Adapter, PCI-X, 2 Copper RJ-45
Marvell	SysKonnect SK-9S81 1000Base-SX Server Adapter,PCI-X, Fiber SX/LC
Marvell	SysKonnect SK-9S82 1000Base-SX Dual Port Server Adapter, PCI-X, 2 Fiber SX/LC
Marvell	SysKonnect SK-9S91 1000Base-LX Server Adapter,PCI-X, Fiber LX/LC
Marvell	SysKonnect SK-9S92 1000Base-LX Dual Port Server Adapter, PCI-X, 2 Fiber LX/LC
Marvell	SysKonnect SK-9P22 10/100/1000 Base-T Dual Port PMC card
Marvell	TPMC-GBE-CO
Marvell	SysKonnect SK-9P82 1000 Base-SX Dual Port PMC card
Marvell	TPMC-GBE-FI
Marvell	Generic Marvell Yukon Chipset based Ethernet Controller
NVIDIA	NVIDIA nForce Networking Controller
Realtek Semiconductor Corp.	Realtek RTL8139/810x Family Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8139/810x Family Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8139/810x Family Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8139/810x Family Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8139C+ Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8139C+ Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8139C+ Fast Ethernet NIC
Realtek Semiconductor Corp.	(MOBILE ASSIST)Realtek RTL8139/810x Family Fast Ethernet NIC
Realtek Semiconductor Corp.	(MOBILE ASSIST)Realtek RTL8139/810x Family Fast Ethernet NIC
Realtek Semiconductor Corp.	NETGEAR FA311v2 PCI Adapter
Realtek Semiconductor Corp.	D-Link DFE-690TXD CardBus Card
Realtek Semiconductor Corp.	D-Link DFE-538TX 10/100 Adapter
Realtek Semiconductor Corp.	D-Link DFE-530TX+ PCI Adapter
Realtek Semiconductor Corp.	D-Link DFE-528TX PCI Adapter
Realtek Semiconductor Corp.	Realtek RTL8102E Family PCI-E Fast Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8168/8111 PCI-E Gigabit Ethernet NIC

Manufacturer	Device
Realtek Semiconductor Corp.	Realtek RTL8168C(P)/8111C(P) PCI-E Gigabit Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8169/8110 Family Gigabit Ethernet NIC
Realtek Semiconductor Corp.	Realtek RTL8169/8110 Family Gigabit Ethernet NIC
Broadcom	3Com Dual Port 1000-SX PCI-X Server NIC
Broadcom	3Com Dual Port 10/100/1000 PCI-X Server NIC
Broadcom	3Com Quad Port 10/100/1000 PCI-X Server NIC
Broadcom	Broadcom NetXtreme Gigabit Ethernet
Broadcom	Broadcom NetXtreme Gigabit Ethernet
Broadcom	Broadcom NetXtreme Gigabit Fiber
Broadcom	Broadcom NetXtreme Gigabit Fiber
Broadcom	Broadcom 570x 10/100 Integrated Controller
Broadcom	Broadcom NetXtreme FE-A
Broadcom	Broadcom NetXtreme FE-B
Broadcom	Broadcom NetXtreme 57xx Gigabit Controller
Broadcom	Broadcom NetXtreme Fast Ethernet
Broadcom	Embedded Broadcom NetXtreme 5721 PCI-E Gigabit NIC
Broadcom	Broadcom NetLink (TM) Gigabit Ethernet
Broadcom	Broadcom NetLink (TM) Fast Ethernet
Broadcom	Broadcom 570x Gigabit Integrated Controller
Broadcom	Broadcom 440x 10/100 Integrated Controller
Broadcom	Broadcom 440x 10/100 Integrated Controller
Broadcom	ASUSTeK/Broadcom 440x 10/100 Integrated Controller
Broadcom	ASUSTeK/Broadcom 440x 10/100 Integrated Controller
Broadcom	MSI/Broadcom 440x 10/100 Integrated Controller
Broadcom	MSI/Broadcom 440x 10/100 Integrated Controller
Broadcom	Broadcom 802.11g Network Adapter
Broadcom	Broadcom 802.11a Network Adapter
Broadcom	Broadcom 802.11 Multiband Network Adapter
Broadcom	Broadcom 802.11n Network Adapter
Broadcom	U.S. Robotics Wireless 802.11g PC Card Adapter
Broadcom	U.S. Robotics Wireless 802.11g PCI Adapter
Broadcom	USRobotics Wireless Nd1 PC Card (Default)
Broadcom	USRobotics Wireless Nd1 PCI Adapter (Default)
Broadcom	Linksys Wireless-G Notebook Adapter with SpeedBooster
Broadcom	Linksys Wireless-G Notebook Adapter WPC54G V3
Broadcom	Linksys Wireless-N Notebook Adapter WPC300N
Broadcom	RangeMax Next Wireless Notebook Adapter
Broadcom	RangeMax Next Wireless PCI Adapter
Broadcom	Microsoft Wireless Notebook Adapter MN-720
Broadcom	Microsoft Wireless Notebook Adapter MN-730
Realtek	Realtek RTL8169/8110 Family PCI Gigabit Ethernet NIC (NDIS 6.0)
Realtek	Realtek RTL8168/8111 Family PCI-E Gigabit Ethernet NIC (NDIS 6.0)
Realtek	Realtek RTL8101 Family PCI-E Fast Ethernet NIC (NDIS 6.0)
Realtek	Realtek RTL8029 PCI Ethernet NIC
Realtek	Realtek RTL8150 USB 10/100 Fast Ethernet Adapter
VIA Networking Technologies Inc	VIA Networking Velocity Family Gigabit Ethernet Adapter
ULi Electronics Inc.	ULi M526X Ethernet Controller
ULi Electronics Inc.	ULi PCI Fast Ethernet Controller
3Com	3Com EtherLink 10/100 PCI For Complete PC Management NIC (3C905C-TX)
3Com	3Com 10/100 Mini PCI Ethernet Adapter
3Com	3Com EtherLink 10/100 PCI Combo NIC (3C905B-COMBO)
3Com	3Com EtherLink 100 PCI Fiber NIC (3C905B-FX)
3Com	3Com EtherLink 10/100 PCI TX NIC (3C905B-TX)

Manufacturer	Device
3Com	3Com EtherLink PCI Fiber NIC (3C900B-FL)
3Com	3Com EtherLink PCI TPO NIC (3C900B-TPO)
3Com	3Com EtherLink PCI Combo NIC (3C900B-COMBO)
3Com	3Com EtherLink PCI TPC NIC (3C900B-TPC)
3Com	3Com 3C920B-EMB Integrated Fast Ethernet Controller
3Com	3Com 3C920B-EMB-WNM Integrated Fast Ethernet Controller
3Com	3Com 3C920 Integrated Fast Ethernet Controller (3C905C-TX Compatible)
3Com	3Com 3C918 Integrated Fast Ethernet Controller (3C905B-TX Compatible)
3Com	3Com EtherLink 10/100 PCI NIC (3C905-TX)
3Com	3Com EtherLink 10/100 PCI T4 NIC (3C905-T4)
3Com	3Com EtherLink PCI TPO NIC (3C900-TPO)
3Com	3Com EtherLink PCI Combo NIC (3C900-COMBO)
3Com	3Com Gigabit Ethernet Server NIC (SX/TX)
3Com	IBM eServer iSeries Gigabit Ethernet Adapter
3Com	3Com Gigabit LOM (3C940)
3Com	3Com Gigabit NIC (3C2000)
3Com	3Com Gigabit NIC
3Com	3Com 10/100 PCI NIC w/3XP (3CR990-TX-95)
3Com	3Com 10/100 PCI NIC w/3XP (3CR990-TX-97)
3Com	3Com 10/100 Secure NIC (3CR990B-97)
3Com	3Com 100 Secure Fiber NIC (3CR990B-FX-97)
3Com	3Com 10/100 Secure Server NIC (3CR990B-97)
3Com	3Com 100 Secure Fiber NIC (3CR990-FX-97)
3Com	3Com 10/100 PCI Server NIC w/3XP (3CR990SVR95)
3Com	3Com 10/100 PCI Server NIC w/3XP (3CR990SVR97)
3Com	3Com 3C2000-T Gigabit Adapter
3Com	3Com 3C940 Gigabit LOM Ethernet Adapter
3Com Corporation.	3Com 3C910 Integrated Fast Ethernet Controller (3CSOHO100B-TX Compatible)
3Com Corporation.	3Com OfficeConnect 10/100 Network Interface Card (3CSOHO100B-TX)
Accton	Accton EN1207D Series PCI Fast Ethernet Adapter
Accton	Integrated 10/100 Ethernet Adapter
Accton	Accton EN2242A Series Mini-PCI Fast Ethernet Adapter
Accton	Accton EN1208 PCI Ethernet Adapter
Accton	Accton EN2212 PCMCIA Ethernet Adapter
Accton	Accton EN2216/2316 PCMCIA Ethernet Adapter
Accton	Accton Cheetah PCI Fast Ethernet Adapter
Accton	Accton EN1207-TX PCI Fast Ethernet Adapter
Accton	Accton Cardbus Fast Ethernet Adapter
Accton	Accton EN1207F Series PCI Fast Ethernet Adapter
Accton	Accton EN1207F Series PCI Fast Ethernet Adapter
Accton	Accton LM1247 Series PCI Fast Ethernet Adapter
Accton	Accton LM1247 Series PCI Fast Ethernet Adapter
Accton	Accton LM2247 Series Mini-PCI Fast Ethernet Adapter
Accton	Accton LM2247 Series Mini-PCI Fast Ethernet Adapter
Accton	Accton LM2247(A) Series Mini-PCI Fast Ethernet Adapter
Accton	Accton LM2247(A) Series Mini-PCI Fast Ethernet Adapter
Accton	Accton EN2220A Fast Ethernet Cardbus PC Card
Accton	Accton EN2220A Fast Ethernet Cardbus PC Card
Accton	Accton EN2242 Series MiniPCI Fast Ethernet Adapter
Accton	Accton EN2242 Series MiniPCI Fast Ethernet Adapter
Accton	Accton EN2320 Fast Ethernet Cardbus PC Card
Accton	Accton EN2320 Fast Ethernet Cardbus PC Card
Accton	Accton CheetahPower Enhanced 10/100 Adapter AC-EN3207
Accton Technology Corp.	Accton EN1407T Giga-bit Ethernet Adapter

Manufacturer	Device
Accton Technology Corp.	Accton EN1408T Giga-bit Ethernet Adapter
ASIX	ASIX AX88772 USB2.0 to Fast Ethernet Adapter
ASIX	ASIX AX88178 USB2.0 to Gigabit Ethernet Adapter
ASIX	ASIX AX88180 PCI Giga Ethernet Adapter(V3)
ASIX	ASIX AX88180 PCI Giga Ethernet Adapter(PLX)
Addtron	Addtron AEF-380TXD PCI Fast Ethernet Adapter
Allied Telesyn	Allied Telesyn AT-2800Tx Fast Ethernet Adapter
Cabletron	Cabletron DE500A PCI Fast Ethernet Adapter
Cabletron	Cabletron DE500B PCI Fast Ethernet Adapter
Compex	Compex FreedomLINE PCI Fast Ethernet Adapter
Eagle by Microdyne	Eagle by Microdyne PCI Fast EtherMAX
Kingston	Kingston EtheRx KNE100TX PCI Fast Ethernet Adapter
Linksys	Linksys EtherFast 10/100 CardBus PC Card (PCMPC200)
Linksys	Linksys EG1032 v2 Instant Gigabit Network Adapter
Linksys	Linksys HomeLink 10M Integrated PC Card
Linksys	Linksys Phoneline 10M Network Card
Linksys	Linksys USB 2.0 10/100 Adapter
NCR	NCR 21140 PCI Fast Ethernet Adapter
Netgear	NETGEAR FA310TX Fast Ethernet Adapter (DC21x4)
Netgear	Netgear 10/100Mbps CardBus Mobile Adapter
Netgear	Lite-On Communications Compatable PCI Fast Ethernet Adapter
Netgear	NETGEAR FA310TX Fast Ethernet Adapter (NGRPCI)
NETGEAR	NETGEAR FA330/FA331 PCI Adapter
NETGEAR	NETGEAR FA410TX Fast Ethernet PC Card
NETGEAR	NETGEAR FA411 PCMCIA Mobile Adapter
NETGEAR	NETGEAR GA302T Gigabit Adapter
Netgear	NETGEAR GA620 Gigabit Ethernet Card
Netgear	NETGEAR GA620T 10/100/1000 Ethernet Card
NETGEAR	NETGEAR GA621 Gigabit Fiber Adapter
NETGEAR	NETGEAR FA311/312 PCI Adapter
Netgear	NETGEAR GA311 Gigabit Adapter
NETGEAR	NETGEAR GA311 Gigabit Adapter
Racore	Racore Cardbus Fast Ethernet Adapter
SMC	SMC Extreme Cardbus Fast Ethernet Adapter
SMC	SMC9332BDT EtherPower 10/100
SMC	SMC9332BVT EtherPower T4 10/100
SMC	SMC9334BDT EtherPower 10/100 (one port)
SMC	SMC EZ CardBus 10/100 Fast Ethernet Adapter (SMC8034)
SMC	SMC EZ Card 10/100 (SMC1255TX)
SMC	SMC EZ CardBus-II 10/100 PC Card (SMC8034)
SMC	SMC EZ CardBus-II 10/100 PC Card (SMC8036)
SMC	SMC Compact USB to Ethernet converter
SMC	EZ Connect USB/Ethernet Series Converter
SMC	EZ Connect USB to Dual Speed Ethernet Converter
SMC	SMC EZ Card 10/100 (SMC1244TX V2)
SMC	SMC EZ Card 1000 (SMC9452TX V.2)
SMC	SMC 10/100 PC Card
SMC	SMC EZ Card 10/100 PCI (SMC1211 Series)
SMC	SMC 10/100 PC Card (SMC8041 V.2)
SMC	SMC EZ CardBus-II 10/100 PC Card
TDK	TDK Netflyer Cardbus Fast Ethernet Adapter
CHEETAH	CHEETAH ETHERCARD EN2228
ASIX Electronics	ASIX AX88140 Based PCI Fast Ethernet Adapter
ASIX Electronics	ASIX AX8814X Based PCI Fast Ethernet Adapter

Manufacturer	Device
ASIX Electronics	CNet PRO110 PCI Fast Ethernet Adapter
ASIX Electronics	ASIX AX88190 Based PCMCIA Fast Ethernet Adapter
ASIX Electronics	ASIX AX88796B Based ISA Ethernet Adapter
PCMCIA Technology Inc.	PCMCIA 10/100 Ethernet Card
PCMCIA Technology Inc.	PCMCIA 10Mbps Ethernet Card
	%MTD800.DeviceDesc%
	100/10M Ethernet PCI Adapter
	%MTD891.DeviceDesc%
Sundance	Sundance ST201 based PCI Fast Ethernet Adapter
ADMtek Incorporated	ADMtek AN983 based ethernet adapter
ADMtek Incorporated	ADMtek AN983 10/100Mbps PCI Adapter
ADMtek Incorporated	ADMtek ADM9510 10/100Mbps Fast Ethernet Adapter
ADMtek Incorporated	ADMtek AN985 10/100Mbps Fast Ethernet Adapter
ADMtek Incorporated	ADMtek ADM9511 10/100Mbps Fast Ethernet Adapter
ADMtek Incorporated	ADMtek ADM9513 10/100Mbps Fast Ethernet Adapter
ADMtek Incorporated	ADMtek AN986 USB To Fast Ethernet Adapter
ADMtek Incorporated	ADMtek ADM8511 USB To Fast Ethernet Adapter
ADMtek Incorporated	ADMtek ADM8513 USB To Fast Ethernet Adapter
ADMtek Incorporated	ADMtek AN986 USB 10/100 MAC
AmbiCom	AmbiCom EZPort Fast Ethernet CardBus PC Card(CB100-EZ)
Conceptronic	Conceptronic CONSP100TU USB 10/100 Adapter
D-Link Corporation.	D-Link DGE-500T Gigabit Adapter
Hewlett-Packard Company	HP NC3120 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3161 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3160 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3122 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3131 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3132 Fast Ethernet Module
Hewlett-Packard Company	HP NC3133 Fast Ethernet Module
Hewlett-Packard Company	HP NC3163 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3162 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3123 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3134 Fast Ethernet NIC
Hewlett-Packard Company	HP NC3135 Fast Ethernet Upgrade Module
Altima	Altima 1000 Gigabit Ethernet (Copper)
Altima	Altima 1001 Gigabit Ethernet (IntegratedCopper)
Altima	Altima 1002 Gigabit Ethernet (IntegratedCopper)
Altima	Altima 1003 Gigabit Ethernet (IntegratedCopper)
Altima	Altima 1000 Gigabit Ethernet (Fibre)
Atheros	Atheros L1 Gigabit Ethernet 10/100/1000Base-T Controller
Atheros	Atheros L2 Fast Ethernet 10/100 Base-T Controller
Atheros	Atheros L2 Fast Ethernet 10/100 Base-T Controller
Atheros	Atheros L2 Fast Ethernet 10/100Base-T Controller
Nobrand	Nobrand PCI 10/100/1000 Gigabit Ethernet Adapter, PCI 32bit, Copper RJ-45
AMD Inc.	AMD PCNET Family Ethernet Adapter (PCI)
Allied	Allied Telesyn AT-2700TX PCI 10/100 Ethernet Adapter
Allied	Allied Telesyn AT-2700FX PCI 100Mb Ethernet Adapter
Allied	Allied Telesyn AT-2450v3 PCI Ethernet Adapter
HP	HP Ethernet with LAN remote power adapter
Belkin	Belkin Gigabit Desktop Card
Belkin	F5D5000, PCI Card/Desktop Network PCI Card
IC Plus Corp.	IC Plus IP100 10/100 Fast Ethernet Adapter
IC Plus Corp.	IC Plus IP1000 Family Gigabit Ethernet Adapter
Advanced Micro Devices (AMD)	AMD PCnet-Home Based Adapter

Manufacturer	Device
Diamond Multimedia	Diamond Multimedia Home Network Adapter
D-Link Corp.	D-Link DFE-690TXD CardBus PC Card
D-Link Corp.	D-Link DGE-528T Gigabit Ethernet Adapter
Linksys Group Inc.	Linksys EG1032/EG1064 Instant Gigabit Network Adapter
LinkSys Group Inc.	Linksys LNE100TX(v5) Fast Ethernet Adapter
MELCO INC.	BUFFALO LGY-PCI-TXC Fast Ethernet Adapter
MXIC	Macronix MX987xx Family Fast Ethernet Adapter
MXIC	Macronix MX987xx Family Fast Ethernet Adapter (ACPI)
MXIC	Macronix MX987xx Family Fast Ethernet Adapter (CardBus)
D-Link Corporation	D-Link DUB-E100 USB 2.0 Fast Ethernet Adapter
D-Link Corporation	D-Link DFE-530TX+ PCI Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 10/100 Low Power PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM Fiber PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM Fiber/TP PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	10/100 PCI Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 9009 PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM DM-9102A PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 9102/A PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 1/10/100 PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM LongRun/10/100 PCI Fast Ethernet Adapter
DAVICOM Semiconductor, Inc.	DAVICOM PCI HomeRun Adapter
DAVICOM Semiconductor, Inc.	DAVICOM PCI LongRun Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 9102A Half Based Switching Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 9102A Full Based Switching Adapter
DAVICOM Semiconductor, Inc.	DAVICOM 10 Base-T PCI Ethernet Adapter
DAVICOM Semiconductor, Inc.	10/100 PCI Fast Ethernet Based Adapter
DAVICOM Semiconductor, Inc.	DM9601 USB To Fast Ethernet Adapter
Madge	Smart MK4 PCI Adapter
Madge	Madge Smart 100/16/4 PCI-HS Ringnode
Madge	Madge Smart 16/4 PCI Ringnode Mk3
Madge	Madge Presto PCI 2000
Madge	Madge Presto PCI Plus
Madge	Madge Presto PCI
Madge	Smart 16/4 CardBus Mk2
Madge	Madge 16/4 CardBus Adapter
Madge	Smart 16/4 PCMCIA MK2
Madge	Madge Smart 16/4 PCMCIA Ringnode
Madge	Madge Smart 16/4 PCI Ringnode Mk2
Olicom	Olicom RapidFire 3540 HSTR 100/16/4 PCI Adapter
Olicom	Olicom RapidFire 3139 Token-Ring 16/4 PCI Adapter
Olicom	RapidFire 3140 16/4 TR PCI Adapter
Olicom	RapidFire 3140V2 16/4 TR PCI Adapter
Olicom	RapidFire 3141 16/4 TR PCI Fiber Adapter
Olicom	Olicom Token-Ring PCI/II 16/4 Adapter (OC-3137)
Olicom	Olicom GoCard 3250 Token-Ring 16/4 CardBus PC Card
Olicom	GoCard Token-Ring C30 PC Card
CNet Technology, Inc.	CNet PRO200WL PCI Fast Ethernet Adapter
CNet Technology, Inc.	CNet PRO200 PCI Fast Ethernet Adapter
Archtek Telecom Co.	10/100 Mbps PCI Ethernet Adapter
NETGEAR Incorporated	NETGEAR FA101 USB Fast Ethernet Adapter
NETGEAR Incorporated	NETGEAR FA120 USB 2.0 Fast Ethernet Adapter
Network Everywhere	Network Everywhere Fast Ethernet Adapter(NC100)
Network Everywhere	Network Everywhere Fast Ethernet Adapter(NC100 v2)
Network Everywhere	%AN985.DeviceDesc%

Manufacturer	Device
Network Everywhere	PCI 10/100 Fast Ethernet Adapter(DEC21140)
Network Everywhere	PCI 10/100 Fast Ethernet Adapter(DEC21143)
PC Card Series Products	PCMCIA Fast Ethernet Card
PC Card Series Products	PCMCIA Ethernet Card
CardBus	CardBus Fast Ethernet 10/100 Adapter
CardBus	CardBus Fast Ethernet PC Card Adapter manual load
CardBus	Fast Ethernet CardBus PC Card
CARDBUSs	CardBus 10/100 Fast Ethernet PC Card
CARDBUSs	CardBus Fast Ethernet Attached Port PC Card
CARDBUSs	U.S. Robotics Cardbus 10/100 Ethernet PC Card
SMC Networks	SMC EZ Networking Compact 10/100 USB 2.0 Adapter
National Datacomm Corporation	NDC ND5100 Ethernet PC Card
smartBridges	smartNIC HOT-SYNC(tm) Network Adapter
smartBridges	smartNIC2 PnP Network Adapter
SURECOM Technology Corp.	SURECOM EP-320G-TX 10/100/1000M Gigabit Ethernet Copper PCI Adapter
SURECOM Technology Corp.	SURECOM EtherPerfect-427 Lan Card
SURECOM Technology Corp.	SURECOM EP-427X 100/10M PCMCIA Adapter
SURECOM Technology Corp.	SURECOM EP-427X 16bit 100/10M Couplerless PCMCIA Adapter
SURECOM Technology Corp.	SURECOM EP-428X 32-bit 100/10M CardBus PC Card
SURECOM Technology Corp.	SURECOM EP-428X 32-bit 100/10M CardBus PC Card
SURECOM Technology Corp.	SURECOM EP-325 PCI Ethernet Adapter
SURECOM Technology Corp.	SURECOM EP-320X-R 100/10M PCI Adapter
SURECOM Technology Corp.	%MTD800.DeviceDesc%
SURECOM Technology Corp.	SURECOM EP-320X-S 100/10M Ethernet PCI Adapter
SURECOM Technology Corp.	%MTD891.DeviceDesc%
SURECOM	EP-320G-TX1/TXL SURECOM 32bit PCI Gigabit Ethernet Adapter
SURECOM	SURECOM EP-312 ISA PnP Ethernet Adapter
Surecom	SURECOM EP-9321-g/g1 802.11g 54M WLAN PCI Adapter
Surecom	SURECOM EP-9428-g 802.11g 54M WLAN CardBus Adapter
TRENDware Corp.	TEG-PCBUSR Gigabit PC Card
Silicon Integrated Systems Corp.	SiS191 1000/100/10 Ethernet Device
Silicon Integrated Systems Corp.	SiS190 100/10 Ethernet Device
Silicon Integrated Systems Corp.	SiS191 100/10 Ethernet Device
Silicon Integrated Systems Corp.	SiS191 Ethernet Device
SMC Networks, Inc.	SMC EZ Card 10/100 (SMC1255TX)
SMC Networks, Inc.	SMC EZ Card 10/100 (SMC1255TX-PF)
U.S. ROBOTICS CORPORATION	U.S. Robotics 10/100 PCI NIC TX
U.S. ROBOTICS CORPORATION	U.S. Robotics 10/100 PCI NIC TX
National Semiconductor Corp.	National Semiconductor Corp. DP83815/816 10/100 MacPhyter PCI Adapter
National Semiconductor Corp.	SOHOware NSA100 10/100 PCI Network Adapter
National Semiconductor Corp.	EDIMAX EN-9140 10/100 Fast Ethernet NIC Family
National Semiconductor Corp.	CNPower200WL 10/100Mbps PCI Fast Ethernet Wake-On-LAN Adapter
National Semiconductor Corp.	CNPower200 10/100Mbps PCI Fast Ethernet Adapter
National Semiconductor Corp.	National Semiconductor DP83820 Copper Gigabit Adapter
National Semiconductor Corp.	National Semiconductor DP83820 Fiber Gigabit Adapter
National Semiconductor Corp.	Accton EN1407T Giga-bit Ethernet Adapter
National Semiconductor Corp.	Accton EN1408T Giga-bit Ethernet Adapter
Xircom	Xircom CardBus Ethernet 10/100
Xircom	Xircom CardBus Ethernet II 10/100
Xircom	Xircom CardBus Ethernet 100 + Modem 56 (Ethernet Interface)

Manufacturer	Device
Xircom	Xircom RealPort2 CardBus Ethernet 10/100
Xircom	Xircom RealPort2 CardBus Ethernet 10/100+Modem 56 (Ethernet Interface)
Xircom	Xircom CardBus Ethernet 10/100 Adapter manual load
Xircom	Network of Xircom CreditCard Ethernet 10/100 + Modem 56
SMC Networks, Inc	SMC TigerCard 1000
U.S. Robotics	U.S. Robotics 10/100 PCMCIA NIC TX
U.S. Robotics	U.S. Robotics 10/100/1000 PCI NIC
ZyXEL Communications Corp	Prestige USB Adapter
PCI Ethernet Adapter Manufacturer	PCI Ethernet Adapter
VIA Networking Technologies, Inc.	VIA Networking Velocity-Family Giga-bit Ethernet Adapter
Realtek Semiconductor Corp	Realtek 8180 Extensible 802.11b Wireless Device
Realtek Semiconductor Corp	Realtek 8185 Extensible Wireless Device
Realtek Semiconductor Corp	Realtek 8185 Extensible 802.11b/g Wireless Device
Realtek Semiconductor Corp	Realtek 8185 Extensible 802.11a/b/g Wireless Device

Manufacturer	Device
Adaptec	Adaptec ASC-48300 SAS/SATA Host Adapter
Adaptec	Adaptec ASC-48300 SAS Host Adapter
Adaptec	Adaptec AIC-9410w SAS Controller
Adaptec	Adaptec AIC-9410w SAS/SATA Controller
Adaptec	Adaptec AIC-9405 SAS/SATA Controller
Adaptec	Adaptec ASC-44300 SAS/SATA Controller
Adaptec	Adaptec ASC-58300 SAS/SATA Controller
Adaptec	Adaptec AIC-7899 Ultra160 PCI SCSI Card
Adaptec	Adaptec SCSI Card 39160 - Ultra160 SCSI (Generic)
Adaptec	Adaptec AIC-7892 Ultra160 PCI SCSI Card
Adaptec	Adaptec SCSI Card 29160 - Ultra160 SCSI (Generic)
Adaptec	Adaptec SCSI Card 19160 - Ultra160 SCSI (Generic)
Adaptec	Adaptec SCSI Card 39160 - Ultra160 SCSI
Adaptec	Compaq 64-bit/66MHz Dual Channel Wide Ultra3 SCSI Adapter
Adaptec	Adaptec SCSI Card 29160 - Ultra160 SCSI
Adaptec	Compaq 64-bit/66MHz Wide Ultra3 SCSI Adapter
Adaptec	Adaptec SCSI Card 29160N - Ultra160 SCSI
Adaptec	Adaptec SCSI Card 29160LP - Ultra160 SCSI
Adaptec	Adaptec SCSI Card 19160 - Ultra160 SCSI
Adaptec	Adaptec 2915/2930LP PCI SCSI Controller
Adaptec	Adaptec Serial ATA HostRAID
Adaptec	Adaptec SCSI RAID 2200S Controller
Adaptec	Adaptec SCSI RAID 2120S Controller
Adaptec	Adaptec SCSI RAID 2020ZCR Controller
Adaptec	Adaptec SATA RAID 2020SA Controller
Adaptec	Adaptec SCSI RAID 2025ZCR Controller
Adaptec	Adaptec SATA RAID 2025SA Controller
Adaptec	Adaptec SATA RAID 2410SA Controller
Adaptec	Adaptec SATA RAID 2810SA Controller
Adaptec	Adaptec SATA RAID 21610SA Controller
Adaptec	Adaptec SCSI RAID 2230S Controller
Adaptec	Adaptec SCSI RAID 2130S Controller
Adaptec	Adaptec SATA RAID 2610SA Controller
Adaptec	ICP SCSI RAID ICP9024R0 Controller

Manufacturer	Device
Adaptec	ICP SCSI RAID ICP9014R0 Controller
Adaptec	Adaptec AIC-7870 PCI SCSI Controller (Emulated)
Adaptec	Adaptec 39320-based Ultra320 SCSI
Adaptec	Adaptec 29320-based Ultra320 SCSI
Adaptec	Adaptec AIC-7902B - Ultra320 SCSI
Adaptec	Adaptec AIC-7901-based Ultra320 SCSI
Adaptec	Adaptec AIC-7902-based Ultra320 SCSI
Adaptec	Adaptec AIC-7901 - Ultra320 SCSI
Adaptec	Adaptec SCSI Card 29320A - Ultra320 SCSI
Adaptec	Adaptec SCSI Card 29320LP - Ultra320 SCSI
Adaptec	Adaptec SCSI Card 39320 - Ultra320 SCSI
Adaptec	Adaptec SCSI Card 39320A - Ultra320 SCSI
Adaptec	Adaptec SCSI Card 29320ALP - Ultra320 SCSI
Adaptec	IBM ServeRAID 8i Controller
Adaptec	Adaptec SAS RAID 4800SAS Controller
Adaptec	Adaptec SAS RAID 4805SAS Controller
Adaptec	ICP SAS RAID ICP9085LI Controller
Adaptec	ICP SAS RAID ICP5085BR Controller
Adaptec	Adaptec SATA RAID AAR-2420SA Controller
Adaptec	Adaptec SATA RAID AAR-2620SA Controller
Adaptec	Adaptec SATA RAID AAR-2820SA Controller
Adaptec	ICP SATA RAID ICP9047MA Controller
Adaptec	ICP SATA RAID ICP9067MA Controller
Adaptec	ICP SATA RAID ICP9087MA Controller
Adaptec	IBM ServeRAID 8k/8k-l Controller
Adaptec	IBM ServeRAID 8s Controller
Adaptec	Adaptec SAS RAID 4000SAS Controller
Adaptec	Adaptec SAS RAID 3800SAS Controller
Adaptec	ICP SAS RAID ICP5445AU Controller
Adaptec	Adaptec SAS RAID 1800SAS Controller
Adaptec	Adaptec SAS RAID 3805SAS Controller
Adaptec	ICP SAS RAID ICP5085AU Controller
Adaptec	Adaptec SAS RAID 2400SAS Controller
Adaptec	ICP SAS RAID ICP5045AL Controller
Adaptec	Adaptec SAS RAID 3400SAS Controller
Adaptec	ICP SAS RAID ICP5045AU Controller
Promise Technology	Windows Promise SATAII150 TX2plus (tm) IDE Controller
Promise Technology	Windows Promise SATAII150 TX4 (tm) IDE Controller
Promise Technology	Windows Promise SATA300 TX2plus (tm) IDE Controller
Promise Technology	Windows Promise SATA300 TX4 (tm) IDE Controller
Promise Technology	Promise SATA Console SCSI Processor
Promise Technology	Windows Promise SATA150 TX2plus (tm) IDE Controller
Promise Technology	Windows Promise SATA150 TX4 (tm) IDE Controller
Promise Technology	%Promise_Sata_ControllerDesc%
ULi Electronics Inc.	ULi SATA/RAID Controller (M1573)
ULi Electronics Inc.	ULi SATA II/RAID Controller (M1575/M1697)
DELL	DELL PERC 5/E Adapter RAID Controller
DELL	DELL PERC 5/i Adapter RAID Controller
DELL	DELL PERC 5/i Integrated RAID Controller
DELL	DELL PERC 6/E Adapter RAID Controller
DELL	DELL PERC 6/i Adapter RAID Controller
DELL	DELL PERC 6/i Integrated RAID Controller
DELL	DELL CERC 6/i Adapter RAID Controller
DELL	DELL CERC 6/i Integrated RAID Controller

Manufacturer	Device
DELL	DELL PERC 3/QC RAID Controller
DELL	DELL PERC 3/DC & PERC 3/DCL RAID Controller
DELL	DELL PERC 3/SC RAID Controller
DELL	DELL PERC 4/Di RAID Controller
DELL	DELL PERC 4/DC RAID Controller
DELL	DELL PERC 4/SC RAID Controller
DELL	DELL CERC ATA100/4ch RAID Controller
DELL	DELL PERC 4e/Si RAID Controller
DELL	DELL PERC 4e/Di RAID Controller
DELL	DELL PERC 4e/DC RAID Controller
Dell	Dell SAS 5/E Adapter
Dell	Dell SAS 5/i Adapter
Dell	Dell SAS 5/i Integrated
Dell	Dell SAS 5/iR Integrated D/C
Dell	Dell SAS 5/iR Integrated Emb
Dell	Dell SAS 5/iR Adapter
Dell	Dell SAS 6/iR Adapter
Dell	Dell SAS 6/iR Integrated
Dell	Dell SAS 6/i Integrated
Dell	Dell PERC 4/im RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8408E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8480E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8344ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8308ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 300-8ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 300-4ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 300-12E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 84016E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8300XLP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8888ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8708ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8884E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS 8708E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 350-8ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 350-4ELP RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SAS PCI ExpressT ROMB
LSI Logic Corp.,	Intel(R) RAID Controller SRCSAS18E
LSI Logic Corp.,	Intel(R) RAID Controller SRCSAS144E
LSI Logic Corp.,	Intel(R) RAID Controller SROMBSAS18E
LSI Logic Corp.,	Integrated Intel(R) RAID Controller SROMBSAS28E
LSI Logic Corp.,	MegaRAID SCSI 320-0X RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-0X RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-2E RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-2E RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-0 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-0 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-2 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-2 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-1 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-1 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-4X RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-4X RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-2X RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-2X RAID Controller

Manufacturer	Device
LSI Logic Corp.,	MegaRAID SATA 150-6 RAID Controller
LSI Logic Corp.,	MegaRAID SATA 150-4 RAID Controller
LSI Logic Corp.,	MegaRAID SATA 300-8X RAID Controller
LSI Logic Corp.,	MegaRAID SATA 300-8XLP RAID Controller
LSI Logic Corp.,	MegaRAID PCI Express(TM) ROMB
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 1200 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID RAID Controller RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 1300 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 1400 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Express 200 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 1500 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 1600 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Express 300 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Elite 1600 RAID Controller
LSI Logic Corp.,	MegaRAID SCSI 320-1E RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Express 000 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Express 500/500LC RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 3000 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Elite 1650/1700 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID Enterprise 1700 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID i4 IDE RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID i4133 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 150-6 RAID Controller
LSI Logic Corp.,	LSI Logic MegaRAID SATA 150-4 RAID Controller
IBM	LSI Logic MegaRAID SAS PCI ExpressT ROMB
IBM	IBM SystemX MegaRAID SAS 8808E RAID Controller
IBM	IBM SystemX MegaRAID SAS 8884E RAID Controller
Integrated Technology Express, Inc.	ITE IT8212 ATA RAID Controller
LSI Logic	LSI Logic 8600SP PCI SCSI Adapter; 53C860 Device
LSI Logic	LSI Logic 8951U, 8952U PCI SCSI Adapter; 53C895 Device
LSI Logic	LSI Logic 875XS|D, 2280X PCI SCSI Adapter; 53C875, 53C876 Device
LSI Logic	LSI Adapter, SAS 3000 series, 4-port with 1064
LSI Logic	LSI Adapter, SAS 3000 series, 8-port with 1068
LSI Logic	LSI Adapter, SAS 3000 series, 8-port with 1068E
LSI Logic	LSI Adapter, SAS 3000 series, 4-port with 1064E
LSI Logic	LSI Adapter, SAS RAID-on-Chip, 8-port with 1078
LSI Logic	LSI Adapter, Ultra320 SCSI 2000 series, w/1020/1030
LSI Logic	LSI Adapter, Ultra320 SCSI RAID series, w/1035
LSI Logic	LSI Logic Ultra160 PCI SCSI Adapter; 53C1010-33 Device
LSI Logic	LSI Logic Ultra160 PCI SCSI Adapter; 53C1010-66 Device
LSI Logic	LSI Adapter, 2Gb FC, models 44929, G2 with 929
LSI Logic	LSI Adapter, 2Gb FC, models 40919 with 919
LSI Logic	LSI Adapter, 2Gb FC, models 7202,7402 with 929X
LSI Logic	LSI Adapter, 2Gb FC, models 7102 with 919X
LSI Logic	LSI Adapter, 4Gb FC, models 7104,7204,7404 with 949X
LSI Logic	LSI Adapter, 4Gb FC, models 7104,7204,7404 with 949E
LSI Logic	LSI Logic 22910, 21002 PCI SCSI Adapter; 53C896 Device
LSI Logic	LSI Logic 8953U PCI SCSI Adapter; 53C895A Device
Intel(R) Corporation	Intel(R) RAID Controller SRCU42X
Intel(R) Corporation	Intel(R) RAID Controller SRCU42E
Intel(R) Corporation	Intel (R) RAID Controller SRCS16
Intel(R) Corporation	Intel(R) RAID Controller SRCU41L
Intel(R) Corporation	Intel(R) RAID Controller SRCZCRX
Intel(R) Corporation	Intel(R) RAID Controller SRCS28X

Manufacturer	Device
Intel(R) Corporation	Intel(R) RAID Controller SROMBU42E
VIA Technologies, Inc.	VIA VT8251 AHCI RAID Controller
VIA Technologies, Inc.	VIA VT8237 RAID Controller
VIA Technologies, Inc.	VIA VT8237A RAID Controller
Hewlett-Packard Company	Smart Array 5300 Controller
Hewlett-Packard Company	Smart Array 5i
Hewlett-Packard Company	Smart Array 532 Controller
Hewlett-Packard Company	Smart Array 5312 Controller
Hewlett-Packard Company	Smart Array 6i
Hewlett-Packard Company	Smart Array 641 Controller
Hewlett-Packard Company	Smart Array 642 Controller
Hewlett-Packard Company	Smart Array 6400 Controller
Hewlett-Packard Company	Smart Array 6400 U320 EM Controller
Hewlett-Packard Company	Smart Array P600 Controller
Hewlett-Packard Company	Smart Array Controller
Hewlett-Packard Company	Smart Array P400 Controller
Hewlett-Packard Company	Smart Array P800 Controller
Hewlett-Packard Company	Smart Array P400i Controller
Hewlett-Packard Company	Smart Array E200 Controller
Hewlett-Packard Company	Smart Array E200i Controller
Intel	Intel(R) 82801HEM SATA RAID Controller
Intel	Intel(R) 82801HR/HH/HO SATA RAID Controller
Intel	Intel(R) 82801GHM SATA RAID Controller
Intel	Intel(R) 631xESB/632xESB SATA RAID Controller
Intel	Intel(R) 82801GR/GH SATA RAID Controller
Intel	Intel(R) 82801FR SATA RAID Controller
Intel	I2O StorPort Miniport
Emulex	Emulex LPX000 Fibre Channel Storport Driver
Silicon Integrated Systems Corp	SiS 180 RAID Controller
Silicon Integrated Systems Corp	SiS 965/966 182/1182 RAID Controller
Silicon Integrated Systems Corp.	SiS Storport AHCI Controller
ITE Tech, Inc.	ITE IT8211 ATA/ATAPI Controller
QLogic	QLogic Fibre Channel Adapter
QLogic	QLogic iSCSI Adapter
Broadcom Corporation	Broadcom NetXtreme II C-NIC iSCSI Adapter
Mylex	Mylex AcceleRAID 170 Disk Array Controller
Mylex	Mylex AcceleRAID 352 Disk Array Controller
Mylex	Mylex DAC1164P Disk Array Controller
Mylex	Mylex DAC960PG/PJ/PR/PT/PTL1/PRL Series Disk Array Controller
Mylex	Mylex eXtremeRAID 2000 Disk Array Controller
Mylex	Mylex eXtremeRAID 3000 Disk Array Controller
Mylex	Mylex AcceleRAID 160 Disk Array Controller
LSI Logic Corporation.	LSI MegaRAID IDE 100/MAGNIA Z3x0 Controller
LSI Logic Corporation.	Integrated Ultra ATA-100 Dual Channel Controller
LSI Logic Corporation.	Integrated Ultra ATA-100 IDE RAID Controller
LSI Logic Corporation.	LSI Logic MegaRAID IDE 100 Driver For MAGNIA Z500
LSI Logic Corporation.	LSI MegaRAID IDE 133 Controller
LSI Logic Corporation.	LSI MegaRAID Serial ATA Controller
LSI Logic Corporation.	LSI Logic CSB-6 IDE 100 RAID Controller
LSI Logic Corporation.	Intel Embedded Server RAID Technology
Hewlett Packard	HP NetRAID-3Si
Hewlett Packard	Integrated HP NetRAID
Hewlett Packard	HP NetRAID-1Si
Hewlett Packard	HP NetRAID-1M RAID Controller

Manufacturer	Device
Hewlett Packard	HP NetRAID-2M RAID Controller
Microsoft	Microsoft iSCSI Initiator
ICP vortex	ICP RAID Controller
ICP vortex	RAID Controller
IBM Corporation	IBM ServeRAID 4M Controller
IBM Corporation	IBM ServeRAID 4L Controller
IBM Corporation	IBM ServeRAID 5i Controller
IBM Corporation	IBM ServeRAID 4Mx Controller
IBM Corporation	IBM ServeRAID 4Lx Controller
IBM Corporation	IBM ServeRAID 6M Controller
IBM Corporation	IBM ServeRAID 6i Controller
IBM Corporation	IBM ServeRAID 7k Controller
NVIDIA Corporation	NVIDIA nForce4 IntelR Edition Serial ATA Controller
NVIDIA Corporation	NVIDIA nForce4 Serial ATA Controller
NVIDIA Corporation	NVIDIA nForce 430/410 Serial ATA Controller
NVIDIA Corporation	NVIDIA nForce 590/570/550 Serial ATA Controller
NVIDIA Corporation	NVIDIA MCP61 Serial ATA Controller
NVIDIA Corporation	NVIDIA nForce(tm) RAID Class Device
NVIDIA Corporation	NVIDIA nForce(tm) RAID Class Controller

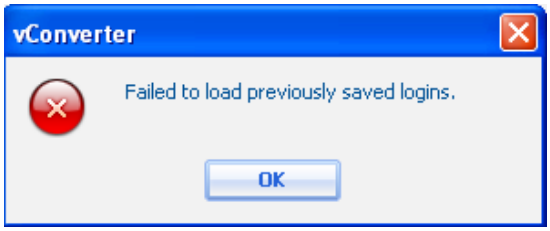
Manufacturer	Device
(Standard IDE ATA/ATAPI controllers)	PCMCIA IDE/ATAPI Controller
(Standard IDE ATA/ATAPI controllers)	IDE Channel
(Standard IDE ATA/ATAPI controllers)	Standard Dual Channel PCI IDE Controller
I-O DATA DEVICE,INC.	CBIDE2-LM DuoATA Card (16Bit Mode)
ULi Electronics Inc.	ULi PCI IDE Controller
ULi Electronics Inc.	ULi M5229 PCI Bus Master IDE Controller
Appian Technology	Appian PCI IDE Controller
CMD Technology	CMD PCI-0640 PCI to IDE Controller
CMD Technology	CMD PCI-0646 Bus Master PCI to IDE Controller
CMD Technology	CMD PCI-0648 Ultra DMA IDE Controller
CMD Technology	CMD PCI-0649 Ultra DMA IDE Controller
CMD Technology	CMD PCI-0646U2 Ultra DMA IDE Controller
Compaq	Compaq PCI IDE Controller
Intel	Intel(R) 82092AA PCI IDE Controller
Intel	Intel(R) 82371FB PCI Bus Master IDE Controller
Intel	Intel(R) 82371SB PCI Bus Master IDE Controller
Intel	Intel(R) 82371AB/EB PCI Bus Master IDE Controller
Intel	Intel(R) 82801AA Bus Master IDE Controller
Intel	Intel(R) 82801AB Bus Master IDE Controller
Intel	Intel(R) 82801BAM Ultra ATA Storage Controller - 244A
Intel	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
Intel	Intel(R) 82801CAM Ultra ATA Storage Controller-248A
Intel	Intel(R) 82801CA Ultra ATA Storage Controller-248B
Intel	Intel(R) 82801DBM Ultra ATA Storage Controller - 24C1
Intel	Intel(R) 82801DBM Ultra ATA Storage Controller - 24CA
Intel	Intel(R) 82801DB Ultra ATA Storage Controller-24CB
Intel	Intel(R) 82801EB Ultra ATA Storage Controllers - 24D1
Intel	Intel(R) 82801EB Ultra ATA Storage Controllers - 24DB
Intel	Intel(R) 6300ESB Ultra ATA Storage Controller - 25A2
Intel	Intel(R) 6300ESB Ultra ATA Storage/SATA Controller - 25A3
Intel	Intel(R) 82801FB Ultra ATA Storage Controllers - 2651
Intel	Intel(R) 82801FB Ultra ATA Storage Controllers - 2652

Manufacturer	Device
Intel	Intel(R) 82801FBM Ultra ATA Storage Controllers - 2653
Intel	Intel(R) 82801FB/FBM Ultra ATA Storage Controllers - 266F
Intel	Intel(R) 82440MX Bus Master IDE Controller
Intel	Intel(R) IA64 Bus Master IDE Controller
Intel	Intel(R) 82801GB/GR/GH (ICH7 Family) Serial ATA Storage Controller - 27C0
Intel	Intel(R) 82801GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27C4
Intel	Intel(R) 82801G (ICH7 Family) Ultra ATA Storage Controllers - 27DF
Intel	Intel(R) ICH8 4 port Serial ATA Storage Controller - 2820
Intel	Intel(R) ICH8 2 port Serial ATA Storage Controller - 2825
Intel	Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828
Intel	Intel(R) ICH8M Ultra ATA Storage Controllers - 2850
PC Technology	PC Tech PCI IDE Single or Dual Port Controller
Silicon Integrated System	SiS PCI IDE Controller
Symphony Labs	Symphony PCI IDE Controller
VIA Technologies, Inc.	VIA Bus Master IDE Controller - 0571
VIA Technologies, Inc.	VIA Serial ATA Controller - 3149
VIA Technologies, Inc.	VIA Serial ATA Controller - 3349
VIA Technologies, Inc.	VIA Serial ATA Controller - 5287
VIA Technologies, Inc.	VIA Serial ATA Controller - 0581
VIA Technologies, Inc.	VIA Bus Master IDE Controller - 5324
VIA Technologies, Inc.	VIA Serial ATA Controller - 0591
VIA Technologies, Inc.	VIA Serial ATA Controller - 5337
VIA Technologies, Inc.	VIA Bus Master IDE Controller - 3164
IBM	IBM Microdrive
Lexar Microsystems	Lexar Media Digital Film Card
SONY	Sony Memory Stick
Standard Microsystems Corp	SMSC SLC90E66 PCI Bus Master IDE Controller
Micron	Micron ATA Flash Card
ServerWorks	OSB4 IDE Controller
ServerWorks	CSB5 IDE Controller
Advanced Micro Devices	AMD-756 PCI Bus Master IDE Controller
Advanced Micro Devices	AMD-766 PCI Bus Master IDE Controller
Advanced Micro Devices	AMD-768 PCI Bus Master IDE Controller
Advanced Micro Devices	AMD-8111 PCI Bus Master IDE Controller
NVIDIA	NVIDIA nForce3 250 Serial ATA Controller
NVIDIA	NVIDIA nForce3 250 Parallel ATA Controller
Standard AHCI 1.0 Serial ATA Controller	Standard AHCI 1.0 Serial ATA Controller

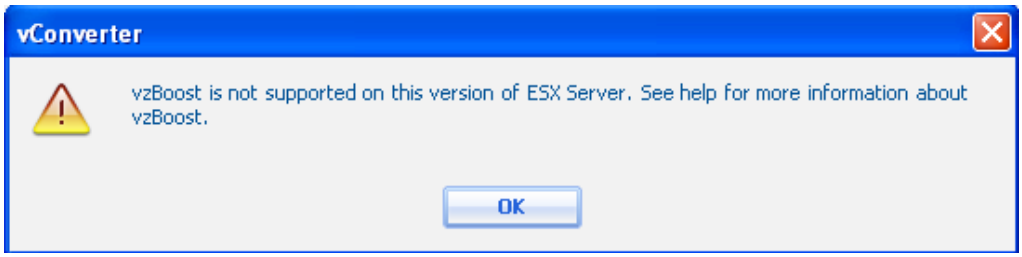
Error Messages

Errors during Installation and Configuration

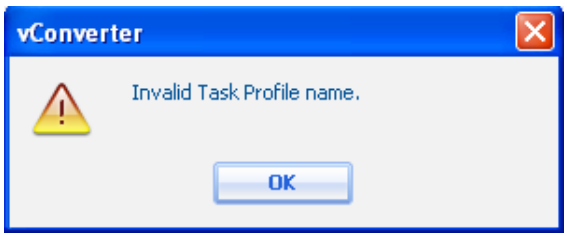
- This displays when you install a new version of the software over a previous version.



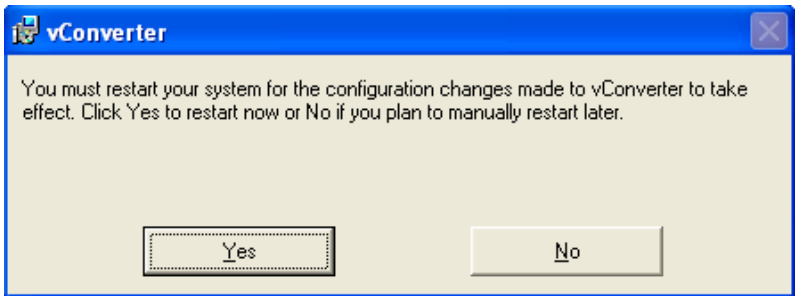
- When you are configuring on the Conversion tab of the Program Preferences dialog, this message can display after you select Enable vzBoost and click Install.



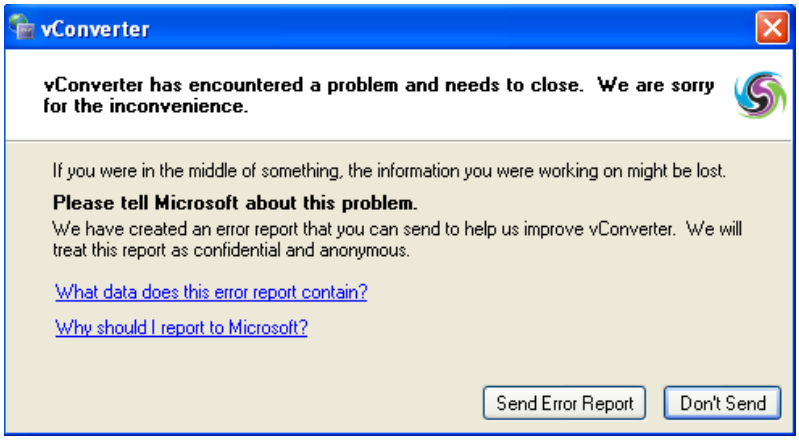
- If you do not populate the Name field on the Task Profile Properties dialog, a message displays.



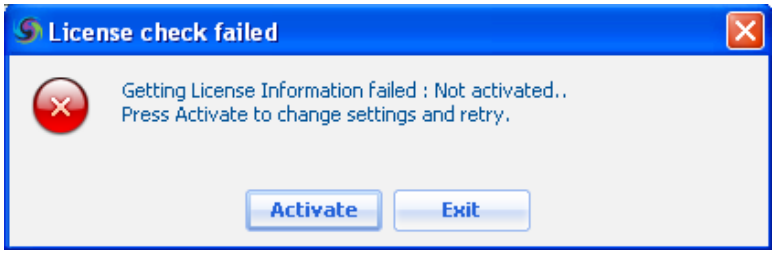
- After installation is complete, this message might display.



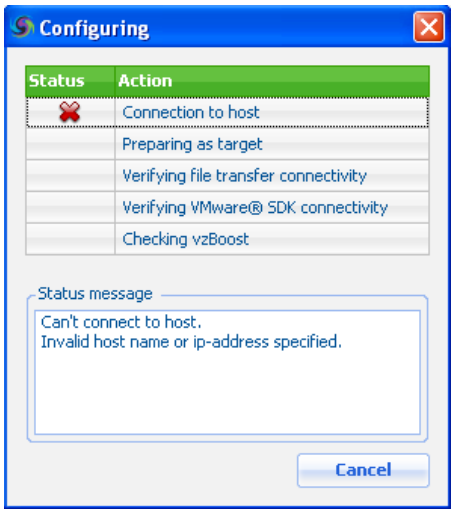
- When you click Yes, this message displays.



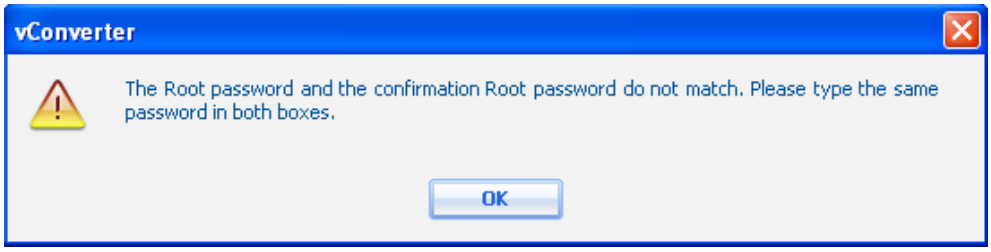
- After installation is complete, this message displays to indicate that licensing must be activated. If you click Activate, the Activation Wizard opens.



- This message might display when you click the Install button on the ESX Server tab of the Program Preferences dialog. This can occur when insufficient or invalid information is entered on the fields of the tab.

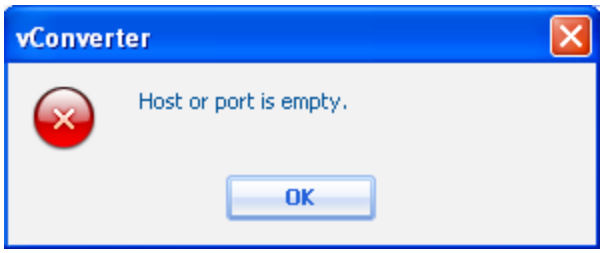


- This message might display when you enter inconsistent passwords for root and then click the Install button on the ESX Server tab of the Program Preferences dialog.

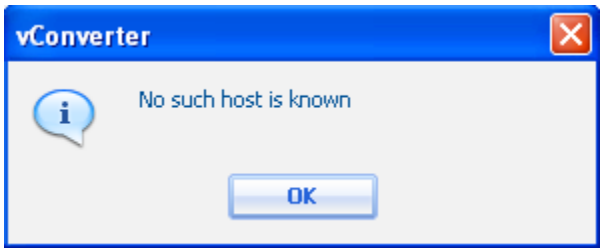


- If you have not confirmed that a DNS entry exists for the IP address that you plan to configure through the ESX Server tab on the Program Preferences dialog, this message will display. See the *Troubleshooting* section of the Appendix for instructions on entering DNS information.

- If the Server name or IP field on the Configure SMTP Preferences dialog is blank, a message will display when you click the Test Server Connection button.

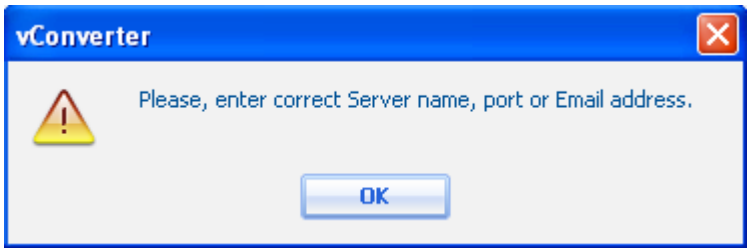


- If the value in the Server name or IP field on the Configure SMTP Preferences dialog is invalid, a message will display when you click the Test Server Connection button.

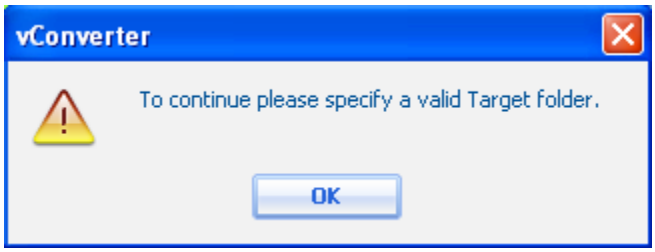


- If the value in the Server name or IP field on the Configure SMTP Preferences dialog is valid but unresponsive, a message will display when you click the Test Server Connection button.

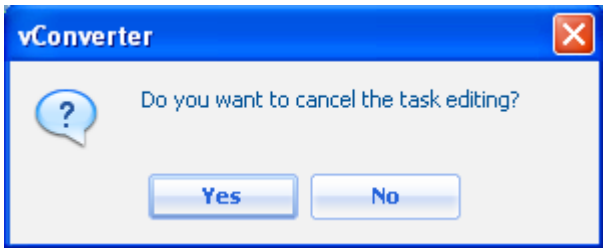
- If any of the values in the Server name or IP, Server Port, or Email Address fields on the Configure SMTP Preferences dialog are invalid, a message will display when you click OK.



- On the Conversion Tasks pane, if you attempt to save a task without entering a target folder, this message will display.

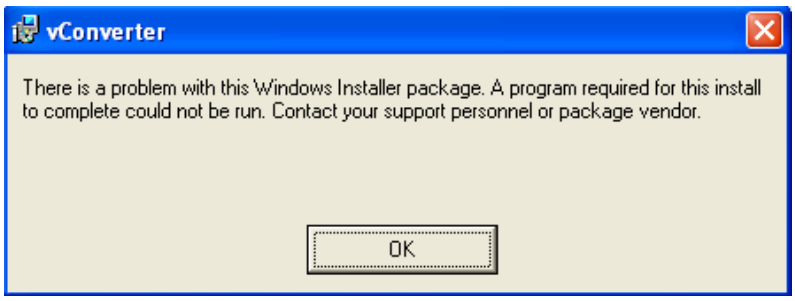


- If you click Cancel on the Conversion Tasks pane while you are creating a task, this message displays.



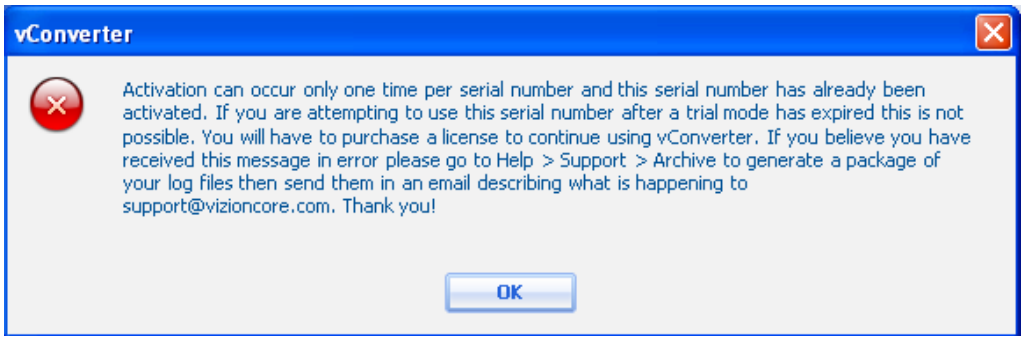
- When you are creating a task using the Create Conversion Task command, you populate the fields on the Conversion Tasks pane. If you enter a local path in the Target Folder field, this message displays.

- These messages can display during installation.



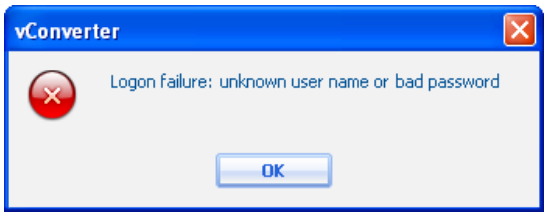
Errors during Activation

- If you attempt to reuse a serial number that has been used for license activation previously, an error message will display.

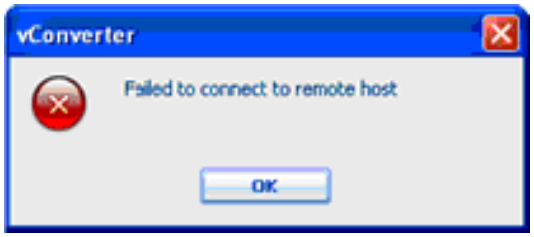


Errors Adding a Source Server

- If you enter invalid credentials, you will receive this message.



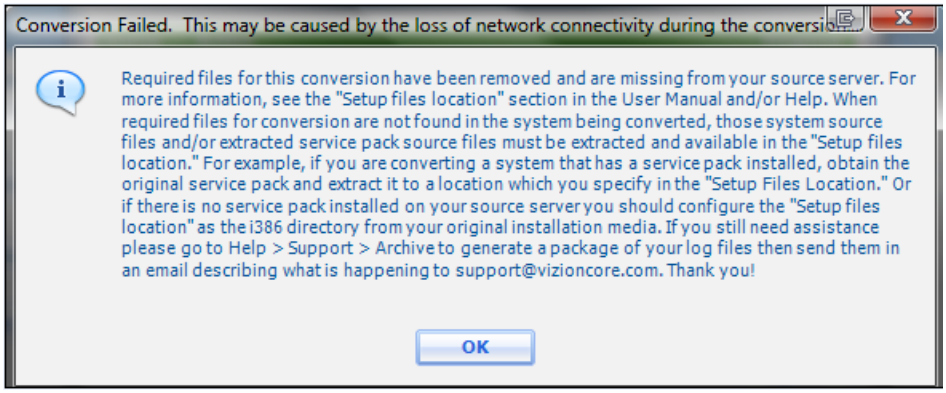
- If the credentials entered do not have logon access to the server, you will receive this message.



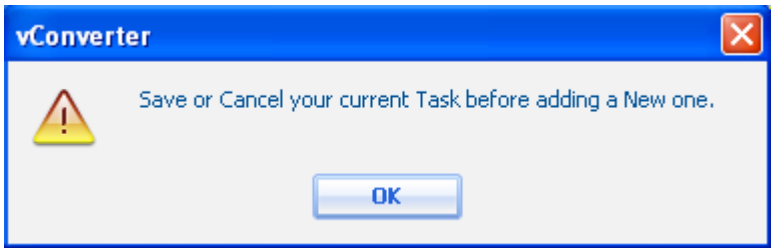
- If you right-click a server in the Network Browser pane and select Add to Source, this message might display.

Errors during Conversion

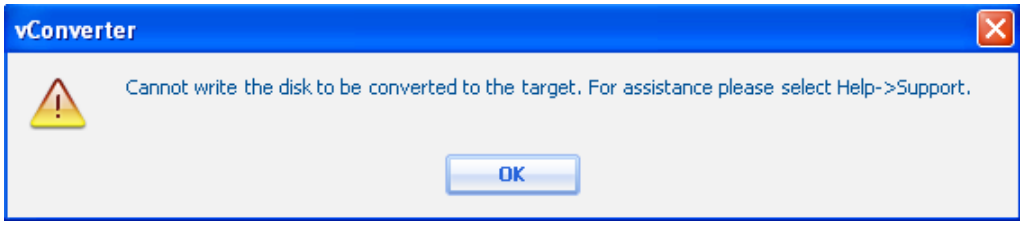
- When files that are required for conversion are missing from the source server, this message can display.

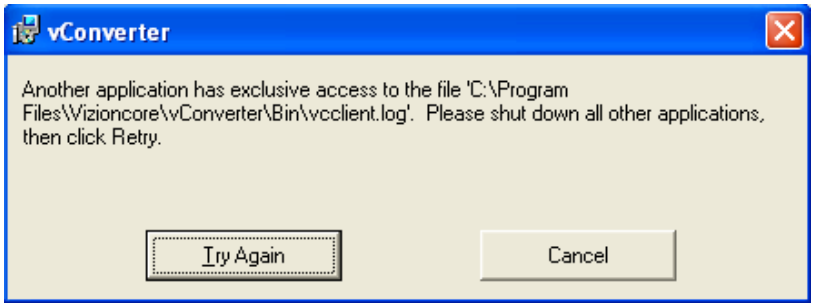


- If you are using the Conversion Wizard to configure a job and you click the Cancel button at any point in the process, this message displays.

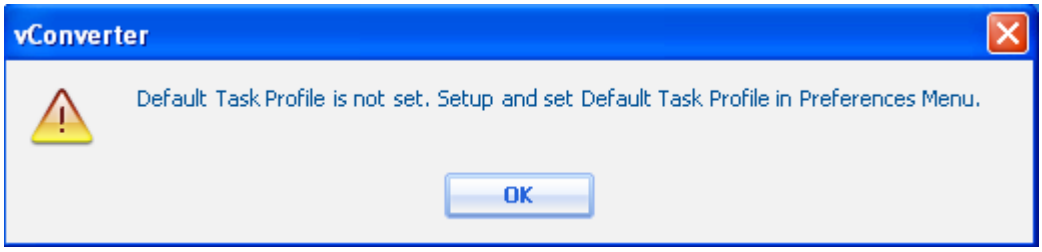


- These messages can display at any time during conversion.

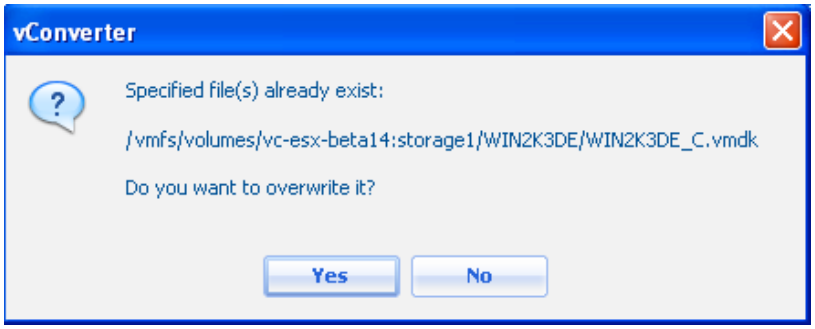




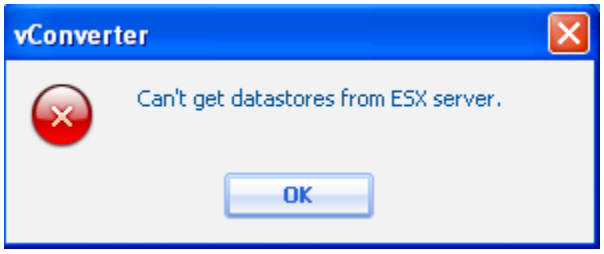
- If you right-click a server in the Network Browser pane and select Create Conversion Task, this message can display.



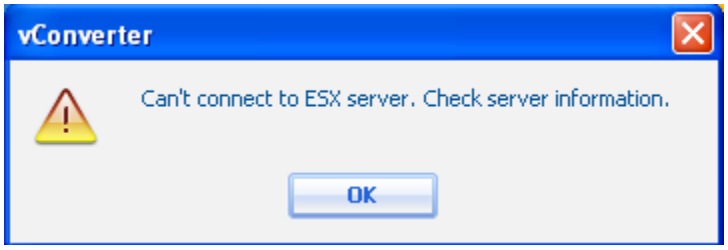
- This message can display when you click the Start Conversion icon on the Conversion Tasks pane:



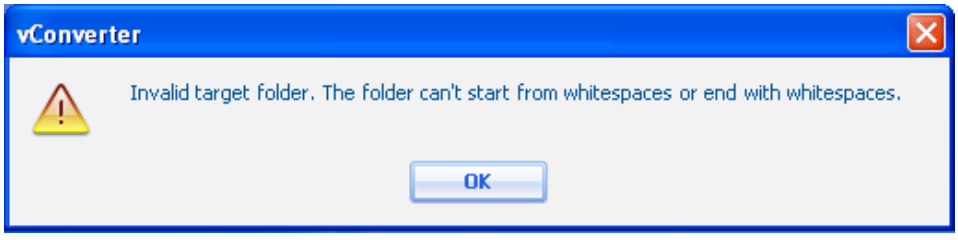
- When you click Browse on Conversion Tasks pane, this message can display.



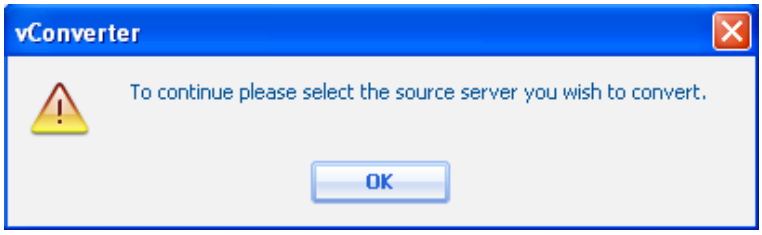
- In All Systems view, when you right-click a server and select Create Conversion this error message can display.



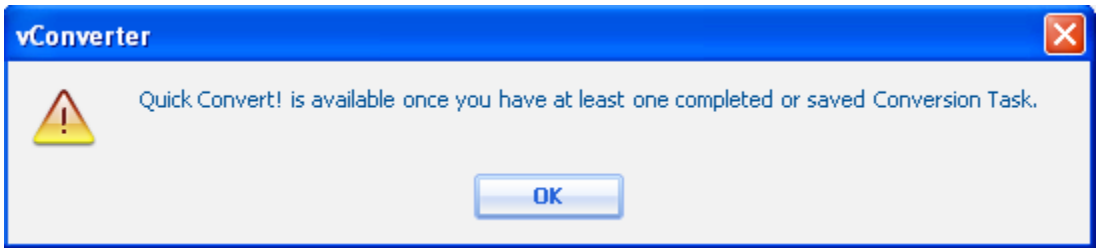
- When you save a conversion job, this message might display.



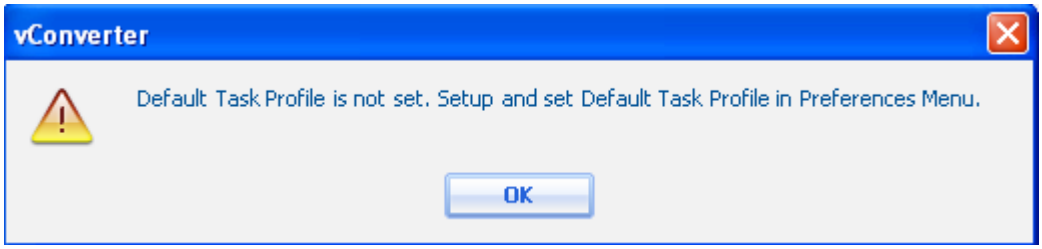
- If you try to exit vConverter before you complete the new task creation process, a message will display.



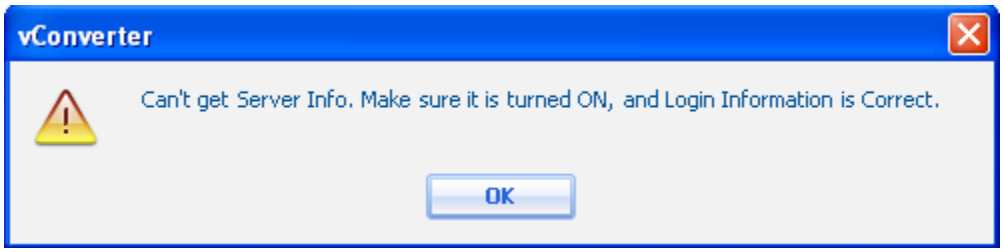
- If you right-click a server in the Systems to Convert view and select Quick Convert, a message will display if you have not created and saved a conversion task on which to base the job.



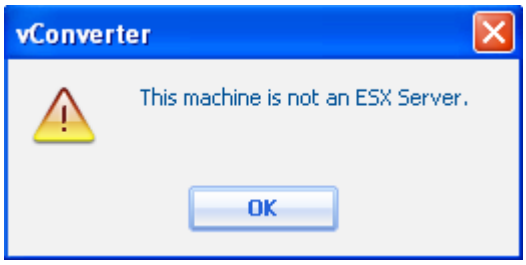
- If you right-click a server in the Systems to Convert view and select Create Conversion Task, a message will display if you have not set a default task profile through Tools→Preferences→Task Profiles.



- This message can display if a server connection is unreliable.



- This message can display when you click the ESX Server tab when not configuring that type of server.



- This message can display at any time during the conversion process.