

Virtual CD v9





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Introduction

Foreword

Thank you for choosing Virtual CD.

In addition to the many suggestions we have received from our users – for which we would like to express our thanks – the adaptation of the program for use with the new Windows Vista operating system from Microsoft was a main point of focus in developing this version.

This documentation explains how Virtual CD works and how you can work with it. You might want to just keep it on hand for reference purposes, to look up specific points as you need them. The information provided here is divided into the following sections:

Introduction: Provides an overview and general information.

Installation: Describes the installation of Virtual CD and what you need to know to make it run smoothly.

First Steps: This section is specifically directed at newcomers, and tells how to make your first virtual CD.

Virtual CD Step by Step: Here you will find detailed descriptions and practical examples of Virtual CD functions.

Virtual CD Jobs: Introduces Virtual CD Jobs, which you can use to automate series of tasks.

Virtual CD in the Network: If you use Virtual CD in a network, check here for the information you need about configuration and operation.

Troubleshooting: This sections offers additional details about the program, as well as tips on solving problems that may arise when you use Virtual CD.



This documentation was written on the basis of a full installation of Virtual CD v9 running on Windows Vista Ultimate Edition. If you use an earlier Windows version or a different version of Vista, or if you have already changed some of the Virtual CD settings, the windows displayed and the controls available may not be the same as those shown here.



The examples given in this documentation often describe only one of several possible methods for executing a particular task. Once you know your way around the program, you may find other techniques for activating the functions you need.

Legal Notices



If you use Virtual CD with CDs or DVDs that are under license, then creating multiple virtual images from a given CD/DVD or running the Virtual CD program with a given virtual CD on more than one computer at a time may constitute a breach of the software licensing agreement you entered into with the manufacturer of the CD/DVD in question. Make sure to check the licensing agreements you have with the CD/DVD manufacturer(s) for detailed information.

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Document Conventions

For added clarity in these texts, this documentation uses the following conventions: Texts quoted from the program (buttons, menu items, dialog texts, etc.) are in **bold** type.

Information that is particularly important is marked by one of the symbols shown below. The information in these notes is essential for trouble-free operation of the software.



Notes or procedures that are especially important are marked by the “exclamation point” symbol you see here.



Tips and tricks for simplifying procedures are marked by the “lightbulb” symbol shown here.



Notes that pertain only to the Microsoft Vista operating system are marked by the “Vista” symbol shown here.

In some cases, step-by-step examples are given of certain tasks or configuration procedures. These steps are marked as follows:



Step 1



Step 2

What Virtual CD can do for you

Virtual CD makes your CD/DVD applications faster, more efficient, and easier to use by storing them in the form of images (“virtual CDs”) on your hard drive using highly effective data compression techniques. Once you’ve made a virtual CD from a physical CD or DVD, simply ‘insert’ it in a virtual drive to run it. Virtual drives behave just like physical drives, and are displayed in the same manner in your Windows Explorer.

With Virtual CD v9:

- ✓ You have support for Windows 2000, XP and XP x64, as well as all versions of Windows Vista and Windows Vista x64.
- ✓ Your CD/DVD-based applications are much faster, because the CDs run from your hard drive rather than from the CD-ROM drive.
- ✓ You don’t have to bother with inserting and removing physical CDs—let alone having to look for them in the first place!
- ✓ You can run your CDs on computers that don’t even have physical CD drives.
- ✓ You can use multiple CDs simultaneously. There is no need for an expensive CD changer.
- ✓ You can designate one of your physical drives for added virtual CD capability.
- ✓ You can keep your valuable original CDs/DVDs from getting lost or damaged.
- ✓ You have a virtual CD/DVD burner that can be addressed by any program that can record CDs.
- ✓ You can automate the process of creating multiple virtual CDs - for example, to have it run overnight.
- ✓ Your notebook conserves precious battery power, because you don’t have to run an energy-hogging CD/DVD drive—and you no longer need the physical CD/DVD recorder.
- ✓ Your workplace is quieter, because CD/DVD drive noise is eliminated.
- ✓ A denoiser function is included that makes your physical CD drives quieter.
- ✓ You can make physical back-ups of your virtual CDs using Smart Virtual CD technology.
- ✓ You can choose whether to permit – or prevent – the use of physical CDs on a given computer.
- ✓ You have intuitive, centralized control of all Virtual CD features using the CD Management program, with a window layout that you can customize.
- ✓ You can use encryption to prevent unauthorized access to sensitive data on virtual CDs.

New Features in Version 9

In case you are already familiar with an earlier version of Virtual CD, the following list will fill you in on the new features available in version 9:

- ✓ Supports Windows XP x64.
- ✓ Can create up to 23 virtual burners and/or drives.
- ✓ The new Comparison Wizard makes it possible to determine whether two selected media are identical.
- ✓ Improved readout functions provide for more compatibility with the latest media.
- ✓ With the new Virtual CD Jobs features, a series of commands can be processed in sequence; for example, you can have two or more virtual CDs created in a continuous, automated process.
- ✓ Improved ISO support:
 - The Blank Media Wizard can now create virtual blank media in ISO format.
 - The Image Writer makes it possible to create ISO images using the One-Click copy method. The new “v9 ISO Copy” template is supplied for this purpose.
- ✓ The grouping function available in Windows XP and later is now supported in CD Management for sorting the display of virtual CDs.
- ✓ You can create desktop shortcuts to any of the programs in the Virtual CD Toolbox, for instant access.
- ✓ You can use a USB flash drive to make a “Smart virtual CD drive” for using virtual CDs on other computers (with no Virtual CD installation).
- ✓ The new Snapshot function is a fast and easy way to insert a particular set of virtual CDs (and eject all others).
- ✓ Create virtual blank media with low data capacity (as little as 64 MB) for better scalability of DVD-RAMs used as hard drives.
- ✓ You can now designate any physical CD-ROM drive for use with virtual CDs.
- ✓ The Image Writer can be used to complete virtual CDs that don't work the first time they are created. In other words, you can add CD geometry or other technical data to an existing virtual CD.
- ✓ The API for integrating virtual CDs into other programs or scripts has been revised and expanded. To open the PDF file with detailed information on the Virtual CD API, select Start / Programs / Virtual CD v9 / API documentation.
- ✓ Numerous other details have been improved in the various Virtual CD programs.



Starting with Virtual CD v9, creating music tracks as sound files is no longer supported. With the advent of Windows Vista, the mechanism required for playing sound files is no longer available. That is why Virtual CD v9 does not permit music tracks to be written as sound files. You can still make virtual CDs with data tracks (as opposed to sound files) from audio CDs. Existing virtual audio CDs can still be played in Windows versions up to and including XP.

Adaptation for Windows Vista

Starting with Virtual CD v9, all x32 and x64 versions of Windows Vista are supported. Because Windows Vista has a number of features that are new, such as user account control (UAC), while some other features that were available in earlier Windows versions have been left out, a number of changes and additions were necessary – aside from adjustments to the driver – to adapt Virtual CD for use in Windows Vista. Some of these will affect Virtual CD's performance in other operating systems as well.

- ✓ Support for the new display: A number of changes (new icons, new file dialogs, etc.) have been made in Vista. These new elements are not available in earlier Windows versions.
- ✓ Extended capabilities for grouping CDs in CD Management and in CD Search results.
- ✓ Adaptation to UAC: Administrator rights are now required for modification of certain configuration settings. Thus some Virtual CD programs – depending on your operating system settings – may now require confirmation of the administrator mode. Older versions are not affected.
- ✓ Changes in the Help program: The format used up to now for the Help program is no longer available starting with Windows Vista. This is why the on-line Help in Virtual CD now uses the Microsoft HTML help format. This format is now supported in all systems.
- ✓ CD drives can no longer be operated in analog mode. That is why it is no longer possible to play existing audio CDs that have sound files rather than data tracks.

If you are not running Windows Vista...

All the of features in Virtual CD are available even if you are not running Windows Vista. There are some functions, however, that only became available in the operating system starting with Windows Vista and are not available in earlier versions.

These include the following, among others:

- Display of the new Vista icons
- Advanced grouping functions. The basic grouping function for the display of virtual CDs is available starting in Windows XP.

- Burning DVDs using only the operating system's media recording function. This feature is available in Windows XP, but 1 GB is the maximum data volume in that version.

You can still play virtual audio CDs that have sound files rather than data tracks in earlier operating system versions.

Virtual CD Licensing

Virtual CD is licensed on a per-workstation basis. In other words, you need one user license for each computer on which Virtual CD is installed. There are single-user and multi-user license codes. The only difference between the two is the number of workstations on which Virtual CD can be installed. If you have a multi-user license code for 5 users, for example, you can run Virtual CD on 5 computers. The license code can be entered on individual workstations either during program setup or later, in the CD Management program.

If you wish to test the program, you can use the demo version for up to **30 days**. Once you purchase the program, you will receive details on where to download the full version. You can install the full version "over" the demo, to upgrade the demo version to a full, licensed version.



When you purchase Virtual CD your license code will be transmitted to you electronically, or is included in the packaging.



If you have purchased an upgrade edition, you will need to enter your Virtual CD Version 7 or Version 8 license code when you enter the Version 9 code.

System Requirements

The following system specifications are required for running Virtual CD:

- ✓ Windows 2000 Professional, Windows XP (Home or Professional), Windows XP x64, Windows Vista (any version), Windows Vista x64
- ✓ The latest service pack for the operating system
- ✓ At least 256 MB RAM
- ✓ Pentium 1 GHz processor or faster
- ✓ Microsoft Internet Explorer version 7 or later
- ✓ Windows Scripting Host 5.6 or later
- ✓ 100 MB hard disk space for installation of the Virtual CD software
- ✓ Recommended display resolution: 1024 x 768

Optional:

- Sound card (for CDs with audio tracks)
- Internet access (to retrieve audio CD data from the FreeDB Cddb server)
- CD/DVD burner to write your virtual CDs or DVDs on physical blanks using Smart Virtual CD technology



When you operate Virtual CD in a network, the program must be installed on a workstation that meets the minimum requirements. Make sure that all workstations using Virtual CD can access the server on which virtual CDs and configuration files are stored, regardless of the platform (Windows, Novell, Linux, etc.).



How much hard disk space you will need in addition to the 100 MB required for installation of the Virtual CD program depends on how many virtual CDs or DVDs you create and the volume of data they contain.

Technical Support

If you have any problems with Virtual CD, we'd like to ask that you check the manual, the Help program and our continuously updated Web pages for assistance:

Virtual CD Online: <http://www.virtualcd-online.com/>

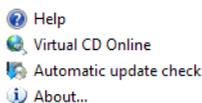
Knowledge Base: <http://www.virtualcd-online.com/kbase>

Support Forum: <http://www.virtualcd-online.com/support>

There is a good chance that your question has already been answered. You are also welcome to publish your own questions in the support forum.

The Virtual CD software is continuously under development. We offer **Service Packs and new program versions** on our Web site as they become available, so you can keep your software up to date. If you activate the “**automatic update check**” in Virtual CD, it will automatically check our site for updates at intervals you define.

Both this setting and a link to our Web site are available the CD Management program window; for example, in the Help menu and in the sidebar.



We are always interested in hearing from our customers, whether you have questions, suggestions or complaints. After all, we make this software for **you**, so it's important that we know what you want! Please use the Virtual CD forum to let us know what you think.

Installation

Notes on Installation

Please observe the following when installing Virtual CD:

Updates: You can only update your installation if you have Virtual CD version 7 or 8. It is a good idea to have the **license code** from your earlier version on hand when you install v9, as you will need to enter it during installation.

Server installation: Virtual CD is not designed for use as server software; it must be installed on a normal workstation. A special Virtual CD File Server (FS) Edition is available for server installation. If you use your server as a workstation, you can still install Virtual CD on that machine; when you run the Setup program, however, you will be prompted to confirm that the program will be installed on a server before installation continues.

Demo vs. Full Version

There are two different versions of Virtual CD:

The **demo version** is **30-day** test version for those who wish to try out the Virtual CD program. This version can be downloaded any time, or distributed on CD-ROMs that come with computer magazines.

The **full version** has no restrictions on functionality nor on period of validity. The full version cannot be downloaded until a purchase has been completed. It is also distributed on commercially available CD-ROMs wherever Virtual CD v9 is sold.

The two versions differ in the following aspects:

1. The demo version is valid for only 30 days.
2. The demo version cannot be upgraded to a full version by entering a license code.
3. The demo version cannot create Client Setups.
4. The demo version cannot retrieve license codes from Virtual CD NMS.



Installing a full version on top of a demo version has the effect of upgrading the demo version to the full, licensed program version. It is not necessary to deinstall the demo version.

Installation

Place the installation CD in a CD drive and wait a moment for Windows to detect it and run the Setup program.

If installation does not start automatically, double-click on **Computer** in your Explorer and then on the icon representing the drive in which you have inserted the installation CD.

When the program starts up, select **Installation** to run the Setup program. If you access the CD content directly, or have downloaded your Virtual CD program over the Internet, you need to run the Setup program “manually.”



If you have purchased Virtual CD, make sure you install the full version. The demo version has restricted functionality, and cannot be upgraded to a full version by entering a license code.



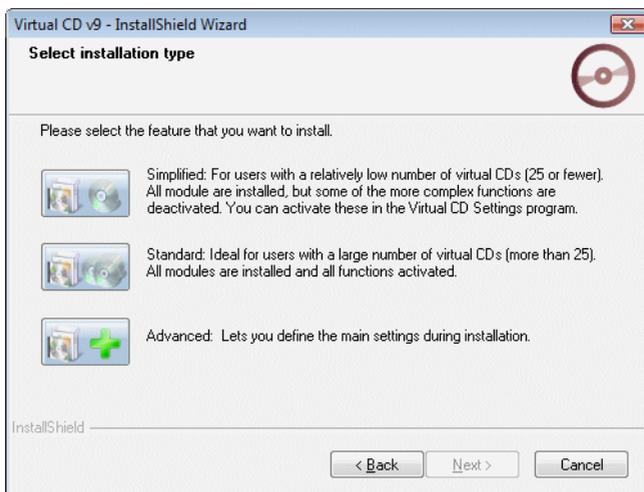
If you have already installed a demo version of Virtual CD, simply install the version “on top of it.” It is not necessary to deinstall the demo version.



If you are installing the full version, you have to enter a valid license code – or have it retrieved from a Virtual CD NMS Server that supports Version 9 – before the installation program will run. This step is skipped when installing the demo version.

Follow the instructions as the Setup Wizard guides you through the installation procedure.

Once you have entered your license code and selected the target directory, you can choose between quick installation for up to 25 CDs, quick installation for more than 25 CDs, and advanced installation.



Virtual CD comes with a Plug & Play driver, which means you do not have to restart the computer after the virtual drives are set up, or after changing the number of virtual drives at a later stage. In some cases, however, you will be prompted by your Windows operating system to restart your computer. **It is important that you do *not* restart the computer before the installation has been completed, regardless of any operating system messages. Otherwise, the installation will not work.**

Quick Installation

If you select one of the two “quick install” methods, Virtual CD is installed automatically, with no further prompting, and can be used right away. You can edit the program settings and add virtual drives as desired following installation. Which settings are configured automatically depends on the type of quick installation you selected (see below).

Installation for users with a low number of virtual CDs (max. 25):

- ✓ The virtual drive that is set up automatically can be used as a virtual CD burner.
- ✓ The CD Management program is set up with a layout designed for use with a relatively low number of virtual CDs.
- ✓ The display of virtual CDs is set to show all virtual CDs in the form of a list in all Virtual CD programs.

Installation for users with a high number of virtual CDs (25 or more):

- ✓ Three virtual CD drives are set up automatically; the first of these can be used as a virtual CD burner.
- ✓ The CD Management program is set up with a layout designed for use with a large number of virtual CDs.
- ✓ The display shows folders into which your virtual CDs are sorted according to your choice of criteria.



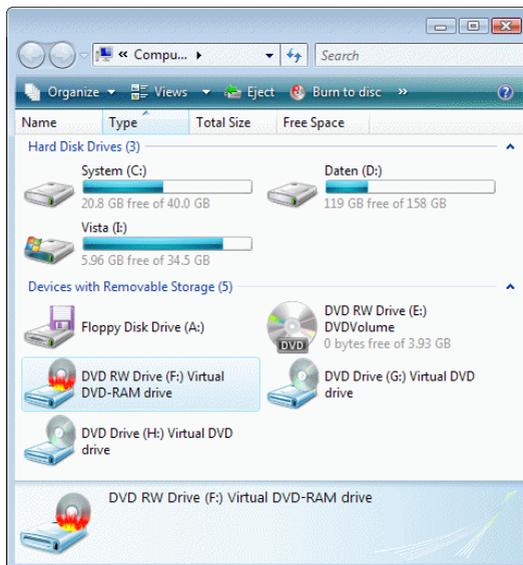
All of the settings you configure during installation can be modified as desired later.

Advanced Installation

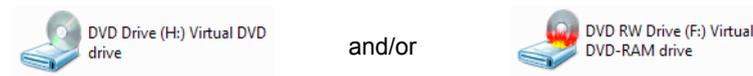
If you select “Advanced installation,” you can configure certain program settings during the setup procedure. Among other things, you can define the number of virtual drives to be set up and which drive letters they use. In general, three to five virtual drives are sufficient for normal operation. You can add or remove virtual drives at any time using the Virtual CD Emulation Settings.

After Installation

Following installation, you can see the virtual drives in your Windows Explorer. The number of virtual drives depends in part on whether you used “quick” or “advanced” installation.



In this example, drive D: is a physical CD drive and E:, F: and G: are virtual CD drives. The E: drive can also be used as a virtual CD burner. For easy recognition, a special “Virtual CD” icon is shown next to the drive letter of a virtual CD drive or virtual burner – unless there is a CD in the drive, in which case the CD might provide its own icon.



In our example, the virtual CD drive is empty since the program has just been installed and no virtual CDs have been created yet. In certain aspects, installing the Virtual CD program is roughly equivalent to installing a hardware CD-ROM drive or a DVD-RAM burner in your computer.



In some cases, the special “Virtual CD” icon might not be shown until after the computer has been restarted.

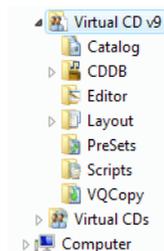
Folders Installed

Virtual CD is usually installed in the Program Files directory under **Virtual CD v9**. This folder contains all files that belong to the Virtual CD program.



If you have already used Smart Virtual CDs on this computer, Virtual CD is automatically installed in the same folder in which Smart Virtual CD stored its files.

Unless you specify otherwise (using “Advanced installation”), the installation program creates a folder called **Virtual CD v9** in the folder of the user performing installation, and under **Public** for access by all users.



With the default settings, all files for virtual CDs are stored so that all users of the particular computer have access to them.

The **Virtual CDs** folder is the default path for new virtual CDs.

All users' **Virtual CD v9** folders contain a number of subdirectories for the files created by the Virtual CD program:

Catalog: Catalog files

CDDB: Music CD data

Editor: Project files made with the Editor

Layout: Layout files for the CD Management program

PreSets: Copy templates

Scripts: Script files and Virtual CD Job files

VQCopy: Quick Copy files



Data that pertains only to a particular user (such as temp files) is stored in that user's folder.

The **Virtual CD v9** can contain subfolders for individual files:

Log: Folder for data that pertains to the particular user

PreCache: Temporary files



In the Virtual CD Settings program, you can specify a user-specific folder for local virtual CDs, to store virtual CDs that are required only by that user. A shortcut to the **Virtual CD** folder for all users is created automatically.



You can change the paths to these folders as needed, in the Virtual CD Settings. This may be necessary, for example, to have virtual CDs stored on a different hard disk.

Repairing or Deinstalling Virtual CD

If you have a problem with your Virtual CD program, or if you need to remove the program from your computer, select **Control Panel-> Programs -> (Programs and Features->) Uninstall a program**. Select Virtual CD v9 and begin the deinstallation. A dialog opens offering the following choices:

Repair: The Setup wizard restores the Virtual CD installation to its initial state. If you have a problem with Virtual CD, use this option to reset Virtual CD to a defined state.

Uninstall: The Setup wizard removes all components of the Virtual CD program from your computer. Afterwards, your computer needs to be restarted. If you want to remove Virtual CD configuration files as well, you need to select the corresponding options.



Configuration files contain references to registered virtual CDs and the tree structure. Do not remove these elements unless you are certain nobody is using them.

First Steps

Getting Started the Fast Way



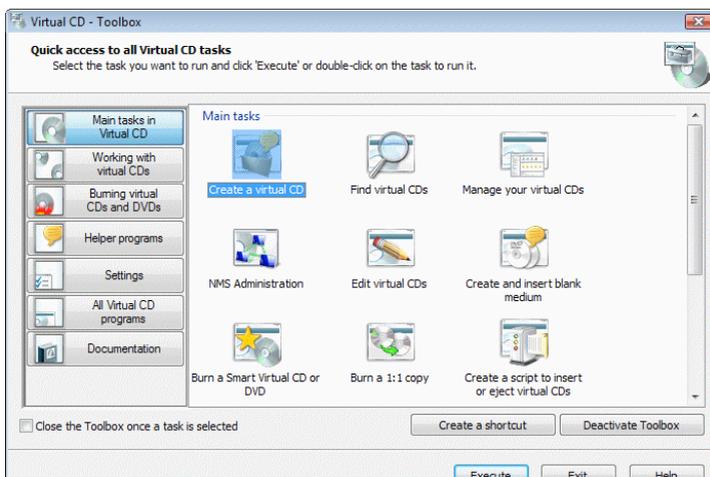
This chapter is intended for readers who have never used Virtual CD before. If you are already familiar with Virtual CD, you might want to skip this section.

Virtual CD offers a vast array of controls that make it easier than ever to use CDs on your computer. Virtual CDs are easy to manage and organize, can be shared over a network with other users and, using either Smart Virtual CD technology or the “1-to-1” copy method, can be backed up in the form of physical CDs. Before you start experimenting with all the possibilities, however, we recommend making your first virtual CD, to get a feel for the program. This is a simple procedure, and can be completed in 5 easy steps.

Your First Virtual CD in 5 Easy Steps



After the installation of Virtual CD has been completed, the Virtual CD Toolbox opens. Here you have easy access to all of the tasks that can be carried out with Virtual CD.



Double-click on the first entry, **Create a virtual CD**, to begin making your first virtual CD.

This opens the Image Wizard, the program that defines all of the configuration options for creation of a virtual CD.

If the Toolbox dialog has already been closed, double-click on the Virtual CD desktop shortcut to open it.



If the Image Wizard does not detect a CD that can be used as a source, you are prompted to insert a source CD.



Insert a CD in your computer's CD-ROM drive. Make sure the data side of the CD is not scratched or dirty.

Wait a few moments for Windows to detect the CD. If a program on the CD runs automatically, shut it down before you continue.



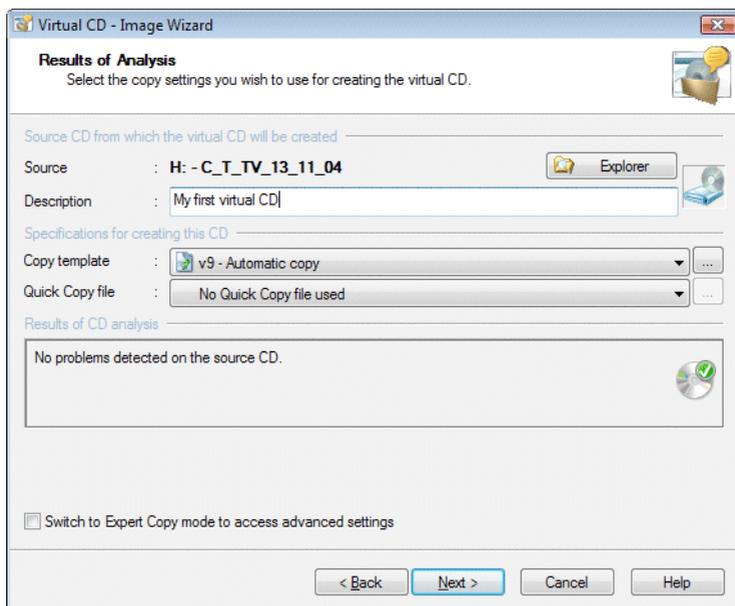
Make sure the source CD is not accessed by any other application while you are making the virtual CD. In particular, make sure that the Windows Media Player is not running; this program is sometimes configured to run automatically any time an audio CD is inserted.



If you have CDs inserted in more than one CD drive on your computer, an **Image Wizard** dialog opens for selecting the desired source CD. In this case, select the desired CD in this dialog. Click on **Continue** to view the results of Virtual CD's analysis of your source CD.

4

You now have the choice of editing the **description** of the virtual CD, if desired. You can also edit the **Copy template**, or select a **Quick Copy** file. In this example, we will leave the default settings unchanged for now.



If the source is an audio CD and the “Free DB CDDb” option is enabled, Virtual CD now attempts to download the album title and track titles from the Internet. This service is free of charge from <http://www.freedb.org>). If your computer is not connected to the Internet when this search is attempted, an error message is shown. This does not affect the creation of your virtual CD — simply confirm and continue.

Click on **Finish** to create the virtual CD. When data transfer is complete, the physical CD is ejected from the drive. If you have any problems while making a virtual CD, refer to the section of this documentation called **Troubleshooting**.



Once the Image Writer has completed the virtual CD, it is automatically added to your Virtual CD “CD Management” program, which automatically opens at this point. Now you can select the virtual CD and use the **Insert** command (e.g., in the toolbar) to insert it in a virtual CD drive.



You have now made your first virtual CD and inserted it in a virtual drive.

For more information...

Having completed our “crash course” in using virtual CD, you have made your first virtual CD and inserted it in a virtual CD drive. For more information on using the Virtual CD program, refer to the Help program or point your browser to Virtual CD Online at <http://www.virtualcd-online.com>.

We hope you enjoy using Virtual CD!

Virtual CD Step by Step

Introduction to the User Interfaces

Using Virtual CD

Virtual CD provides you with a broad range of functions for working with all types of CDs. There are a number of different user interfaces for working with Virtual CD, so you can use the program in whatever way is best suited to your habits and preferences.

Just as in the old saying,

All roads lead to Rome

—there are a number of different approaches for accessing the Virtual CD functions you need.

The Virtual CD program installs the following user interfaces on your computer:

The Toolbox presents direct access to all the main program functions.

The Virtual CD sidebar makes virtual CD drives and the main VCD programs available at all times.

The Quick Start utility on the right-hand side of your Windows task bar gives you quick access to your virtual CD drives and Virtual CD programs.

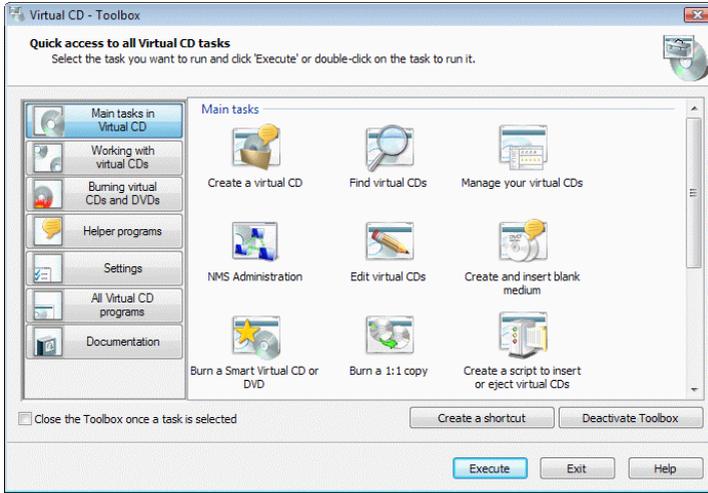
The Explorer Extension adds Virtual CD functions to shortcut menus and other operating elements in your Windows Explorer.

The CD Management program combines centralized administration of your virtual CDs and access to all Virtual CD functions in a single program window.

Toolbox

The Toolbox gives you direct access to the main program functions. You can open the Toolbox from the following access points:

- the **Virtual CD** desktop shortcut
- the Quick Start utility
- the Virtual CD sidebar
- the CD Management program



Use the Toolbox to go straight to the task you need, without going through other windows or menu items. The Toolbox sorts Virtual CD tasks into categories. When you choose a category, only the programs in that category are shown for selection. Click **Create shortcut** to create a desktop shortcut to the selected program. This is especially useful for programs that you run frequently. If you do not use the Toolbox, just click **Disable Toolbox** to deactivate it. In this case, the CD Management program is opened rather than the Toolbox when you double-click on the desktop shortcut or on the Quick Start icon in the task bar.



You can reactivate the Toolbox at any time, on the System page of the Virtual CD Settings program or in the Toolbox itself.

Virtual CD Sidebar

The **Virtual CD sidebar** gives you constant access to all virtual CD drives and the main Virtual CD programs.

You can have the VCD sidebar displayed as follows:

Floating: The sidebar behaves much the same as any window, and can be moved around as desired.

“Docked” on the right or left-hand side of your screen: The sidebar remains in the position you choose.

To move the VCD sidebar, put the mouse cursor on its title bar and hold down the mouse button while you move the mouse. If you don't use the Virtual CD sidebar, deactivate it by opening the System page of the Settings program and de-selecting the **Open the Virtual CD sidebar automatically** option.

The functions available in the Virtual CD sidebar are divided into groups, and the lists of functions in each group can be opened and closed.

Virtual CD drives: This section shows the virtual CD drives and the virtual CDs that are currently in inserted, if any. Left-click on a CD drive to open a menu with the following options:

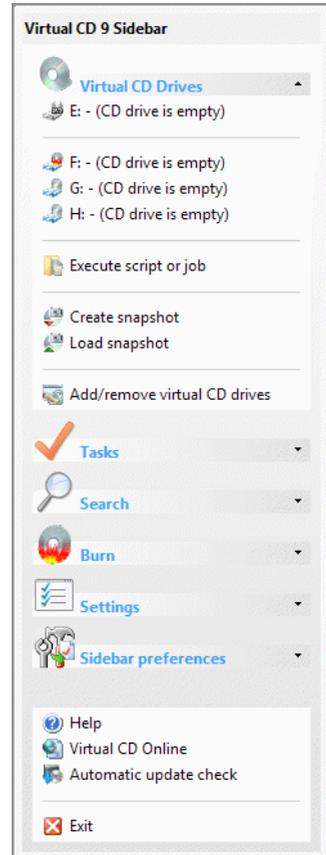
Create and insert a: Opens a list of media types (DVD-R, DVD+R, DVD+R DL, DVD-RAM and CDR) you can have created and inserted. If you wish to specify other parameters for this process, open the Blank Media Wizard.

Insert: Opens a submenu showing all virtual CD drives; select one to insert a virtual CD in that drive.

Insert the selected virtual CD: Opens the file selection dialog, and subsequently inserts the selected virtual CD. You can use this method to insert CDs that are not shown in any Virtual CD program window.

Eject: Opens a submenu showing all virtual CD drives in which CDs are inserted; select one to eject that virtual CD.

Explorer: Opens a submenu showing all virtual CD drives in which CDs are inserted; select one to open the Windows Explorer.



Execute CD autorun: Executes the function that is configured to run automatically when the CD is inserted.

Properties: Opens a window showing the properties of the selected drive.



Some of the commands (such as Eject) are not displayed if they cannot be executed. For example, the Eject command is available only for CD drives in which a virtual CD is inserted; the command is not shown if the drive is empty.



Unlike the Quick Start utility, changes made in the sidebar are visible right away, giving you an optimum overview of your virtual CD drives.

In addition to the virtual drives, the following functions are available:

Execute script or job: Opens a dialog for selecting a script or Virtual CD Job file for execution.

Create snapshot: Creates a snapshot of the current state of virtual drives.

Load snapshot: Opens a dialog for selecting a snapshot for loading.

Add/remove virtual CD drives: Selecting this option opens the Emulation Settings for changing the number of virtual CD drives.

The **Tasks** section provides direct links to the main programs in Virtual CD:

Open the Toolbox: Opens the Virtual CD Toolbox.

Manage virtual CDs: Opens CD Management.

Create a virtual CD: Runs the Virtual CD Image Wizard.

Add technical data to a CD: Runs the Virtual CD Image Wizard to add data to an existing virtual CD.

Edit virtual CDs: Runs the Virtual CD Editor for composing customized virtual CDs.

Copy/move virtual CDs: Runs the Copy Wizard for copying or moving virtual CDs.

Compare images: Runs the Comparison Wizard for comparing virtual CDs to one another or to physical CDs.

Create Virtual CD script: Runs the Script Generator for writing virtual CD scripts.

Create Virtual CD Job: Runs the Job Editor for creating a new job.

Diagnostics: Runs the Virtual CD Diagnostics program.

The **Search** section contains the following options:

Look for virtual CDs and ISO images: Opens the CD Search program for adding images to your Virtual CD Management.

Catalog search: Opens the Catalog Search program for finding folders and files on your CDs.

The **Burn** section contains functions for creating physical media:

Burn a Smart Virtual CD/DVD: Runs the Smart Virtual CD Burner for putting virtual CDs on a physical disk or a USB flash drive.

Burn a 1:1 copy: Runs the Virtual CD Burner for making a copy of a virtual CD, image or physical CD.

Delete data from RW medium: Runs the Eraser Wizard for deleting data from a re-writeable CD or DVD.

The **Settings** section provides access to Virtual CD configuration programs:

Emulation settings: Lets you configure settings for CD emulation.

Edit Virtual CD settings: Opens the Settings program for configuring your Virtual CD program.

The **Sidebar preferences** section lets you set parameters for the Virtual CD sidebar:

Always in the foreground: With this setting active, the Virtual CD sidebar is always displayed on top of any other program windows.

Auto-hide (when docked): If the Virtual CD sidebar takes up too much space on your screen, but you still want it to be available, dock it on one side of the screen and then activate the “Auto-hide” setting. This way, the sidebar is not shown until you move the mouse cursor to that side of the screen; then it remains visible as long as the mouse cursor is on it.

The last section of the sidebar contains links to sources of further information.

Quick Start Utility

With the default settings, the Quick Start utility is automatically activated when you install Virtual CD. This utility installs an icon on the right-hand side of the Windows task bar that gives you direct access to the main Virtual CD functions.



– Quick Start icon

The following menus open when you click on the icon:

Left-click: Opens the **program menu** for quick access to all programs that are installed with Virtual CD.

Right-click: Opens the **drive menu** for direct access to virtual drives and the associated functions.



The Virtual CD program version number is displayed at the top of these menus.



If you have a relatively small number of virtual CDs, you might find that the Quick Start utility is all you need – a sort of “mini-administration tool” – for easy CD management and quick access to most of the program functions.



In the Virtual CD settings you can allocate hotkeys (keyboard shortcuts) to open the Quick Start menus. This gives you even quicker access to the main Virtual CD functions.

The following functions are available in the Quick Start program menu:

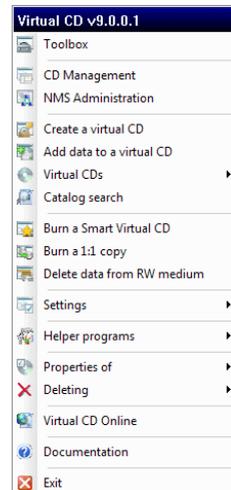
Toolbox: Opens the Virtual CD Toolbox.

CD Management: Opens the CD Management program.

Create a virtual CD: Opens the Virtual CD Image Wizard.

Add technical data to a CD: Runs the Virtual CD Image Wizard to add data to an existing virtual CD.

Virtual CDs: Opens a submenu listing programs for finding (CD Search), editing (Editor), copying (Copy Wizard), converting (Image Converter) or comparing (Comparison Wizard) virtual CDs.



Catalog search: Opens the Catalog Search program for finding folders and files on your CDs.

Burn a Smart Virtual CD/DVD: Runs the Smart Virtual CD Burner or the Copy Wizard to make Smart virtual CDs from virtual CDs.

Burn a 1:1 copy: Runs the Virtual CD Burner for making a copy of a virtual CD, image or physical CD.

Delete data from RW medium: Runs the Eraser Wizard and deletes all data from a re-writeable medium.

Settings: Opens a submenu for selecting dialog pages in the Virtual CD configuration and emulation settings programs.

Helper programs: Opens a submenu listing helper programs, which are not frequently used.

Properties: Opens the image file properties so you can edit parameters relevant to the selected virtual CD.

Delete: Lets you delete the selected virtual CD from the Virtual CD and, if desired, from the hard drive.

Virtual CD Online: Opens the default browser with a page showing links to the most important on-line resources.

Documentation: Opens the Virtual CD Help program.

Exit: Closes down the Quick Start utility.

The following functions are available in the drive menu of the Quick Start utility:

Scripts and Jobs: Opens a menu for opening the Script Generator, to create a script, or the Job Editor, to create a job.

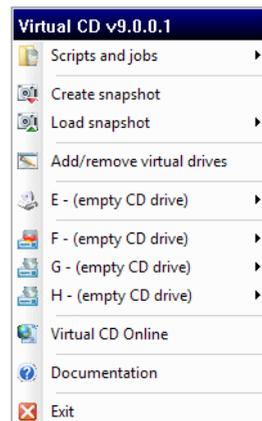
Create snapshot: Creates a snapshot of the current state of virtual drives.

Load snapshot: Opens a dialog for selecting a snapshot to load.

Add/remove virtual CD drives: Opens the Emulation Settings for modifying the number of virtual CD drives.

<Virtual CD drive>: When you put the mouse cursor on a drive letter, the CD in the drive (if any) is shown and the main commands are made available. Only those commands which can be executed for the drive are displayed; e.g., "Eject" is shown only if a CD is in the drive.

Virtual CD Online: Opens the default browser with a page showing links to the most important on-line resources.



Documentation: Opens the Virtual CD Help program.

Exit: Closes down the Quick Start utility.



If you do not want the Quick Start icon displayed in your system tray—for example, if you already have a lot of icons there—open the **System** page of the Virtual CD Settings and switch off the Quick Start utility.

Explorer Extension

A number of Virtual CD features are directly integrated in the Windows Explorer when you install the program.



Not all of the functions described below are available at all times. The **Create a virtual CD** menu item, for example, is not shown unless there is a CD in the physical drive.

The Virtual CD extension for Windows Explorer integration makes the following controls available directly in the Explorer:

Drive properties: Opens a window showing the properties of the selected drive.

Burn a 1:1 copy: When you right-click on a drive containing a virtual CD, the **Burn a 1:1 copy** item is included in the shortcut menu that opens. Select this item to open the Virtual CD Burner to make a physical copy of the CD in the drive.

Inserting a virtual CD: When you right-click on a virtual drive, the shortcut menu includes the menu item **Insert a virtual CD**. When you select this item, a sub-menu shows the available virtual CDs. The virtual CD you select from this list is inserted.



The number of entries that can be added in the Explorer is limited by the Windows operating system. If you have a large number of virtual CDs, they might not all be included in this shortcut menu. Where this is the case, a menu item will indicate that further CDs are available.

Insert the selected virtual CD: Opens the file selection dialog, and subsequently inserts the selected virtual CD. You can use this method to insert CDs that are not shown in any Virtual CD program window.

Create and insert a: Opens a menu with commands for creating a virtual blank medium and having it inserted automatically in the virtual CD burner.

Eject the virtual CD: When you right-click on a virtual CD drive, the shortcut menu contains the **Eject the virtual CD** menu item.



The Virtual CD Explorer Extension adds the **Eject the virtual CD** function because the Windows **Eject** menu item does not always work with virtual CD drives.

Create a virtual CD: When you right-click on a CD drive and select the **Create a virtual CD** menu item, the Image Wizard opens for creating a 1:1 image of the CD in that drive.

One-Click Copy: Select the **One-Click Copy using...** menu item to open a list of VCD Copy Templates. Copy templates contain all the settings needed for writing a virtual CD. When you choose a template here, the virtual CD writing process starts automatically without prompting any further input.



When you right-click on a virtual CD drive in your Explorer, menu items for creating virtual CDs are shown only if the Permit virtual CD drives as source drives option has been activated on the **CDs/CD Drives** page of the Virtual CD Settings.

Other VCD additions to the Explorer:

Choosing virtual CD content: When you right-click on any folder or drive, the shortcut menu contains the menu item **Make a virtual CD of this folder/drive**, for creating a virtual CD that contains the data in that folder or drive.

The Explorer Extension adds the following options to the shortcut menu that opens when you right-click on a virtual CD:

Virtual CD v9: Opens a menu of the tasks (Convert, Burn a 1:1 copy, etc.) that can be carried out on the selected virtual CD.

Insert the virtual CD into: Opens a list of virtual CD drives; the virtual CD is inserted when you select a drive.

Eject the Virtual CD from <drive>: Ejects the virtual CD from the specified drive.



These menu commands can also be applied to ISO-compatible images. Make sure the file type(s) of your ISO images are all entered in the **Supported ISO images** list on the Explorer Integration page of your VCD Settings.



The Explorer Extension also provides icons that indicate the type of CD (data CD, audio CD, etc.). The icon is shown next to the container file name. Thus you can tell at a glance what types of CDs are listed.

The menu commands added by the Explorer Extension give you direct access to Virtual CD controls in your everyday use of the Windows Explorer. Still, you may find it preferable or even necessary at some point to switch off the Explorer Extension. To do this, select the **Disable the Virtual CD Explorer Extension** option on the Explorer Integration page of the Virtual CD Settings program.



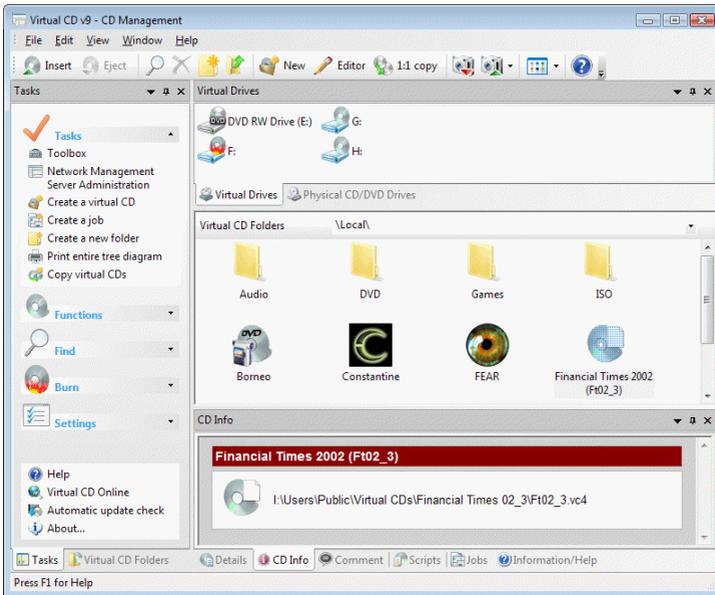
The **Explorer Integration** dialog page offers you the option of switching off just some of the Explorer Extension functions. You can have Virtual CD add only the functions that you need.



If you have very large number of virtual CDs, you may find it advisable to switch off the functions for **Inserting/Ejecting virtual CDs and ISO images**. When these functions are active, the Windows Explorer has to load a large amount of data relevant to virtual CDs, which in some cases can take a great deal of time. Shutting off this function can speed up the process of opening menus in the Explorer considerably.

CD Management: The Virtual CD Control Center

The **CD Management** program brings together all of the functions and administrative tasks in Virtual CD.



If you selected the option for quick installation with fewer than 25 CDs, then your CD Management window uses a streamlined layout. To activate the full layout, select the **Window/Layout/Reset** menu command.

The central area of this program window shows all of the virtual CDs registered in your Virtual CD program. You can sort your virtual CDs into folders, which is especially useful if you have a large number of virtual CDs. For example, you can sort virtual CDs according to category (such as “Games,” “Music,” etc.).



The selection list directly above the virtual CDs shows the currently active folder and lets you change folders in this window pane.

The virtual CD drives in your system are shown above the virtual CDs. A drive letter is shown for each drive, and if there is a CD in the drive, the CD label is shown.

Below and to the left of the virtual CDs are the sidebar and the administration window, each of which can show overviews of a variety of separate topics. In the

Window menu, you can specify which of the following overviews are available in the sidebar and in the administration window:

Tasks: The Tasks sidebar gives you direct access to most of the controls available in CD Management. These controls are divided into five groups: Tasks, Functions, Find, Burn and Settings.



The **Function** group shows only the functions that are available for the element (virtual CD, folder, or other element) that is selected.

Virtual CD Folders: Shows all available Virtual CD folders in a tree diagram.

Physical CD/DVD Drives: Shows all the CD drives that are not managed by Virtual CD.

CD Info: Shows information about the selected virtual CD.

Details: The Details overview lets you view the data structure of a virtual CD without having to insert the virtual CD.

Comment: You can use the Comment function to store information, such as a serial number, or remarks concerning a virtual CD. This window gives you quick access to the information stored in this field.

Properties: This section lists the Properties of a virtual CD, for a quick overview of essential data.

Scripts: Shows all of the scripts available for use with the Virtual CD program.

Copy Templates: Shows a list of the copy templates available for creating virtual CDs.

Quick Copy Files: Shows the Quick Copy files that have been created while writing virtual CDs.

Information/Help: This section shows information and help for using the Virtual CD program. Click on a program element to view information on that element.

User-Defined Views: For administration of your user-defined views (for example, "My Music CDs").

Jobs: Overview of all available Virtual CD jobs.

Snapshots: Overview of all snapshots that have been created.

Layout: You can position the panes in the Management window and then store your configuration as a layout. Open the **Layout** menu to save and load layouts.



To edit any of the files in the Scripts, Jobs, Snapshots, Catalogs, Quick Copy files or Copy templates overview, just select the file and right-click on it. This opens a shortcut menu offering a choice of functions.

To activate an overview in an administration window, click on the name of the window.



The option for creating and storing layouts lets you adapt the CD Management program window for your particular use. You can store different layouts for different sets of tasks, to speed up your daily routines and get the most efficient use out of Virtual CD.



The use of layouts can shorten the time it takes for the CD Management window to open. For example, if you know that you do not need all of the administration windows open, you can create layouts that open only the panes you need. The fewer windows, the less time it takes to open the CD Management program.

Creating Virtual CDs

What You Need to Know

Before you start making your first virtual CD with this version, there are a few things you should know about the program:



Virtual CD 9 lets you create not only virtual CDs, but also ISO images. This is particularly useful when you work with other programs. Keep in mind that the ISO images created with Virtual CD do not support all of the features available in the Virtual CD program.



Sometimes Virtual CD finds **unreadable sectors** when it is reading a source CD. This is **normal** for CDs that use special formats – especially CDs containing games – and does **not** mean that the CD is **defective!**



Some CDs trigger execution of a particular program (such as a music player, for audio CDs) as soon as you put the CD in a drive. Before you start the virtual CD-writing process make sure to close this program, as well as any other programs that access the physical CD drive. If an application tries to access the CD drive while a virtual CD is being created, the virtual CD might not work.



Different CD drives have different capabilities with regard to reading the data on a given CD. Virtual CD configures the best possible settings available for reading source CDs. Still, it might be necessary to change some of the settings for use with a particular physical drive. There are a few types of CD drive that cannot read all of the information that might be found on a given CD. If you have problems creating a virtual CD, try again with a different drive, if you have more than one CD drive available.



Before you run the Image Wizard, make sure the physical CD drive is not being used to run a virtual CD. If it is, the physical drive will not be available for selection as the source for the virtual CD you wish to create.

Supported CD Types

Virtual CD supports all of the most common types of CD. These are generally divided into music CDs (audio) and data CDs. Some CDs contain both audio tracks and data tracks.

The following are the most common formats for data CDs:

CD-ROM: Normal CDs; you have probably used these with your computer many times.

DVD: Successor to the CD-ROM, with considerably greater storage capacity. DVDs store all information, including video and audio, as data tracks. DVDs often have mixed content, such as a video for viewing and a data section for use on a computer.



Video DVDs are often copy-protected. Virtual CD informs you when it detects copy-protection. Virtual CD cannot make a viable image from a video DVD that has CSS copy-protection.

Video CD: Video CDs were the electronic medium used for movies before DVDs were released on the market. The video quality is nowhere near as good as that made possible by video DVDs.

Super Video CD: This CD type offers better video quality than a normal video CD. Lower compression is used, which improves the visual quality but also increases the space required, so that only about 20 minutes of video fit on each CD.

Photo CD: Photo CDs are used to store digital photographs; for example, for viewing on a television. Many film developers today offer the option of having photos stored on a CD.

The most common formats for audio CDs are:

Audio CD: Normal music CD, for use with the CD player in your stereo system.

CD-Text: These are audio CDs with additional information about the album, artist and songs on the CD. The additional information can be read only by devices that have CD-Text capability. In other devices (such as your stereo's CD player) the CD runs like a normal audio CD.

Mixed formats, containing both audio and data tracks, include:

CD-Extra: These CDs have an audio segment and a data segment. When inserted in a CD player, the audio tracks are played just like on a normal audio CD. When inserted in the CD drive on a computer, the data segment is executed.

Mixed Mode CDs: These contain one data track and multiple audio tracks. In the past, this type of CD was widely used for computer games. Today they are rarely used.

In addition to tracks, another unit of data organization used on some CDs is the "session." **Multisession CDs** are created in a series of steps, and each session can be divided into multiple tracks. This type of CD format is used, for example,

to create CDs with both data and audio tracks. One example of this is the “CD-Extra” format, which contains the audio segment in the first session and the data segment in the second. When the CD is placed in a computer, the program(s) in the data segment (usually animation) are executed. When the same CD is placed in a CD player, the data sector is ignored and the CD is treated as a normal music CD.



In addition to the media types listed above, the new **Blu-Ray** and **HD DVD** have recently become available. Because neither these new media nor their drives are in widespread use as yet, Virtual CD does not support these formats.

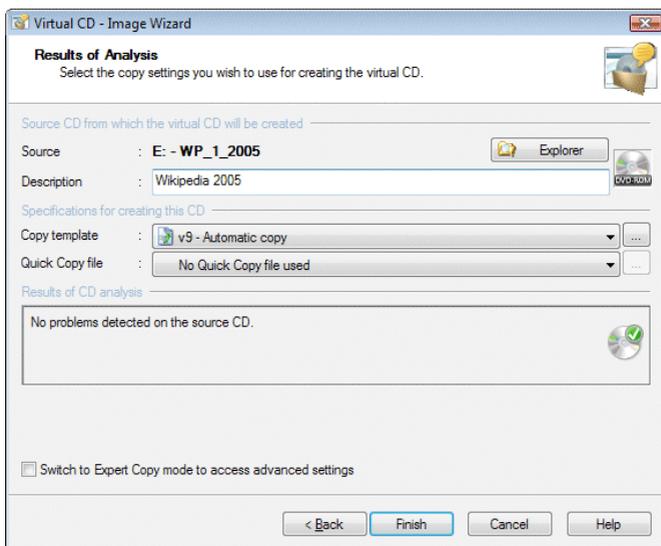
In addition to these normal CD types, there are a few kinds of CD (such as game or audio CD) that use **non-standard formats**. These CDs have properties that are not found in the industry standards that define how CDs are to be made. For example, a data CD that contain unreadable sectors does not conform to the standards for data CDs.



Virtual CD can usually read non-standard CD formats. It may be necessary, however, to configure additional settings (such as “Read CD geometry”) to make a virtual CD from a non-standard source CD.

Image Wizard

The Image Wizard puts together all the settings required for creating a virtual CD, or “image.” When you run the Image Wizard, it analyzes the source CD and shows you the results of the analysis. If more than one CD is available for use as a the source CD, a window opens for selecting the desired CD first.



You now have the choice of editing the **Description** of the virtual CD if desired.



The default **Description** of the virtual CD is the CD label. If the title and artist name for an audio CD were downloaded from the Internet (CDDb), the default description is derived from this data. You can edit this data as desired. It is important to have a description that clearly identifies the CD. Special characters are not allowed here, and the description is limited to 127 characters. The description is also given as the default for the name of the container file.

You can also edit the **Copy template**, or select a **Quick Copy** file. A copy template configures the settings used to create a virtual CD. A Quick Copy file contains data from a source CD that has a non-standard format, and can considerably shorten the length of time it takes to make an image from that CD.



Because a Quick Copy file is written during the process of creating a virtual CD (if the corresponding option is selected), no Quick Copy files are available the first time you make a virtual CD. The time-saving effect is achieved starting with the second image you make from the non-standard CD.



Virtual CD analyzes the performance of the physical CD drive as well as the data structure of the source CD. This process runs in the background. Then Virtual CD uses the data on the physical CD to create a 1:1 copy on your hard disk. Depending on the CD type and data volume, and on your computer's performance specifications, this might take 5 minutes or, for CDs with non-standard formats, anywhere from 45 minutes to several hours.

In the next step, you have two options to choose from:

- You can use the Easy Copy Mode, leaving it up to the Virtual CD program to configure all the settings for the virtual CD – in this case, just click on the **Finish** button to start the Image Writer, and Virtual CD takes over from there;

or

- You can switch to the Expert Copy Mode, and configure the settings for the build process yourself. To do this, activate the **Switch to Expert Copy mode to access advanced settings** option; the **Finish** button label changes to "Next >"; click here to open the next configuration dialogs.



Some configuration options are available **only** in the Expert Copy Mode.

The advanced settings available in Expert Copy Mode are described in detail under Creating a Data CD and Creating an Audio CD. The options presented in

each case are shown only when the corresponding type of CD (audio or data) is inserted.



Both of these step-by-step descriptions assume that the source CD has already been inserted.

Creating a Data CD

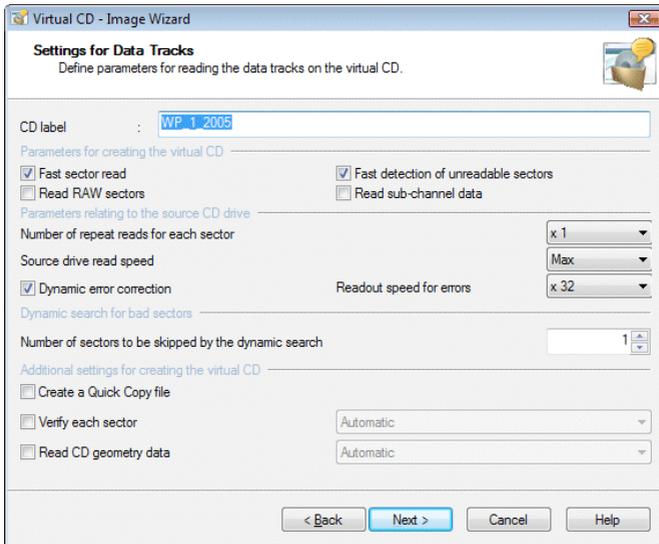
Most CDs and DVDs have a data segment. The Image Wizard settings for making a virtual CD from a data CD are explained in the following.



Select the data CD you wish to use as the source and place it in your physical CD-ROM drive.



Run the Image Wizard, activate the **Switch to Expert Copy Mode...** option, and click on **Next >** to open the Settings for Data Tracks dialog.



The options in this dialog let you specify the exact methods that are used in reading data from the source CD.

When you insert the source CD, Virtual CD analyzes the performance of the CD-ROM drive and the structure of the source-CD data, and suggests a “conservative” choice of settings. You can modify these settings as desired.

The **CD label** is the designation that identifies the CD within your system. This is the text shown next to the drive letter in your Windows Explorer, when the CD is inserted in a drive.



If you change the CD label, the CD might not run properly. This is why the field for editing the CD label is not active unless you have explicitly activated this option on the **CDs/CD Drives** page of the Virtual CD **Settings**.

The following **parameters for creating a virtual CD** are defined here:

Fast sector read: The sectors are read out in blocks, rather than individually. This generally accelerates the reading process, but if a defective sector is found in a given block, then the other sectors in that block must be read again individually. In most cases this is the preferred setting. If a given virtual CD created using this method doesn’t work, however, deselect this option and try writing the virtual CD again.

Fast detection of unreadable sectors: When this option is active, each sector is read once and check routines are applied for error detection. If “fast detection” is disabled, each sector is read repeatedly until exactly the same data is read out several times in a row. If you have difficulties creating a viable virtual CD from a given source CD, disable this option and try again. Keep in mind, however, that it will take longer to make the virtual CD.

Read raw sectors: Raw sectors contain other information in addition to the desired user data. If the source CD has a non-standard format, it may be necessary to read it in “raw” mode in order to create the virtual CD. Furthermore, the “raw” reading mode is required for creating images of video CDs, CD-Extra CDs and audio CDs. The disadvantage of using this mode is that the virtual CD takes up more disk space, as additional files are included in the container.

Read sub-channel data: Sub-channel data contains additional information which is often required for the CD, especially for the newest CD types. Again, the disadvantage is that the virtual CD takes up more disk space.

The next set of options defines **parameters relating to the source CD drive:**

Number of repeat reads for each sector: Readout quality can be improved – especially with some of the earlier-model CD-ROM drives – by reading each sector repeatedly. If a lot of errors are detected, the number of repeat reads should be set to 2 or 3. Unfortunately, this slows down the overall read speed.

Source drive read speed: With some CD-ROM drives, the readout quality can be improved by decreasing the speed. This can also reduce noise, as the source CD rotates more slowly.

Dynamic error correction: The dynamic error correction function adjusts the read speed during the creation of the virtual CD. The degree of precision with which a CD drive can read data depends in part on how fast data is read. This is especially relevant when defective sectors are found. To improve accuracy when dynamic error detection is active, you can define a slower read speed, under **Readout speed for errors**, to be applied when errors are detected. If no errors are found, the maximum speed is used throughout the process.



Only the available read speeds are shown. If no options are offered to choose from, this means your CD-ROM drive does not support this function.

Dynamic search for bad sectors: This option can greatly improve the speed of the overall writing process in cases where defective sectors are found. The default setting here is 1, which means the function is deactivated. If this value is set to 500, for example, and a bad sector is detected, Virtual CD will skip 500 sectors and then start reading again. If the next sector read is also defective, the program reads a few more sectors within this area. If these are also defective, the entire area is marked “defective.”

The following additional settings for creating the virtual CD can also be defined:

Create a Quick Copy file: A Quick Copy file (*.vqc) lets you make another virtual CD from this source on a different computer, even if the CD drive on the other machine does not support the reading techniques required. In fact, the Quick Copy file accelerates the process any time you want to make another virtual CD from the same source; for example, if the first virtual CD is inadvertently deleted.

Verify each sector: Some special formats store multiple instances of a single sector on a CD, with different content in each instance. When you activate this option, Virtual CD reads the source CD again from back to front at the end of the “build” process, comparing the sectors to detect these differences.



Virtual CD has two different methods for verifying sectors. Activate **Automatic** to have Virtual CD select the optimum readout mode. In some rare cases, it may be necessary to specify one of the two modes yourself.



The **Verify each sector** mode increases the amount of time spent reading the source CD considerably. Since the type of non-standard format that requires this mode is not particularly widespread, this option should be selected only if you are sure it is necessary.

Read CD geometry data: This option is required for use with some source CDs. Some non-standard formats have “self-evaluating” mechanisms that check the CD

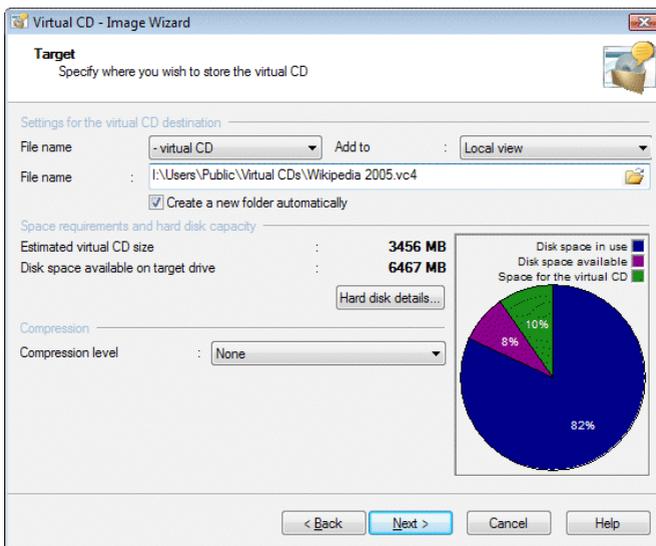
geometry (i.e., the number of sectors in certain areas) to determine whether it is a physical or a virtual CD.



Virtual CD has two different methods for reading geometry data. Activate **Automatic** to have Virtual CD select the optimum readout mode. In some rare cases, it may be necessary to specify one of the two modes yourself.



Once you have configured all the settings you need on this page, click on **Next >** to open the **Target** dialog.



Under **Settings for the virtual CD destination**, define the CD type and the destination folder for the virtual CD.

Choose from the following to select the type:

Create—

—**a virtual CD**: Creates a virtual CD that supports all of the features available in the Virtual CD program. This is the default setting.

—**an ISO image**: Creates an ISO images that is compatible with a lot of other programs, but does not support all of the Virtual CD features.



The **Create an ISO image** option is available only if you are writing a CD-ROM or DVD. Other CD formats cannot be stored as ISO images.

The dropdown list box next to **Add to** lets you define where the virtual CD will appear in user interfaces (default setting: **Local view**):

Local view: The virtual CD is only visible on the computer you are now using.

Global view: The virtual CD is visible on all computers that use the same global configuration path.

Neither view: The virtual CD is **not** shown in any of the Virtual CD programs.



Options that are not available are not displayed here.

Under **File name**, the path and name for storing the virtual CD are defined. The path shown when this dialog opens is the **default path for new virtual CDs** as defined in the Virtual CD Settings. You can select a different path if desired.



The path and file name together must not exceed 254 characters in length.

Select the option **Create a new folder automatically** if you want Virtual CD to create a separate folder for the container files that make up your virtual CD. Because the Virtual CD program writes at least two files for each virtual CD, it can be difficult to tell which files belong to which virtual CD. For this reason, we recommend leaving this option activated.

Click on **Hard disk details...** for a quick view of the disk space available on your hard disk(s).

Other options include switching off **compression** for data tracks, and choosing from 4 compression levels. The higher the compression level you choose, the longer it takes to create the virtual CD and the greater the CPU load when you run the CD. On the other hand, the lower the compression level, the more disk space is required for the resulting virtual CD.

The table below lists the advantages and disadvantages of the different compression options:

None

Fastest build process
Least CPU load
Takes up the most space on the hard disk

Level 1

Good compromise between CPU load and storage space required
Little additional CPU load

Levels 2 and 3

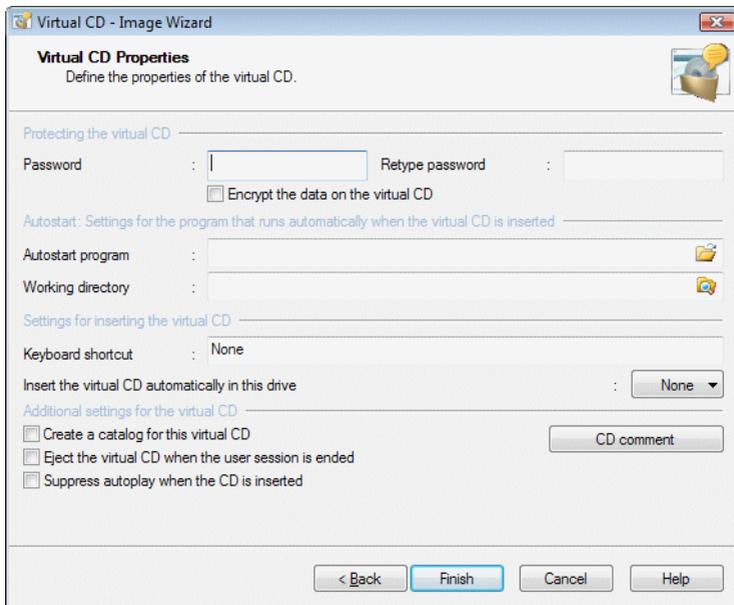
Especially suited for use with sectors copied in “raw” mode
Greater CPU load

Level 4

Least disk space required
Only suitable for 1 GHz processors or faster
Takes longest to create the virtual CD



Once you have configured the settings for the virtual CD destination, you can define **Virtual CD Properties**.



You can assign a **password** if desired, to prevent unauthorized use of a given virtual CD. Once a password has been assigned, it must be entered before the virtual CD can be inserted or ejected, or its properties edited. The password has to be entered twice to define it.

The password merely protects the CD from unauthorized access. To encrypt the data that is on the CD, select **Encrypt the data on the virtual CD**. In this case, the data is encoded using AES 256 encryption.



We recommend using a password that is not too easy to guess. The most secure passwords have at least 8 characters and include numbers, letters and special characters. The password is case sensitive (capitals are distinguished from lower-case letters) and can have up to 15 characters.



It might be a good idea to keep a copy of your password in a safe place. Without the password, there is no way to access the data on the virtual CD.



You can change or deactivate the password later by opening the Virtual CD Properties dialog in the CD Management program, but only if the data on the virtual CD is not **encrypted**. If the data is encrypted, **the password cannot be changed**.

You can define an **autostart program** if you want to have a program started automatically when the virtual CD is inserted. For example, if the virtual CD contains images, you can enter an image-viewing program here as the start program.

In some cases, you need to define a **working directory** for the autostart program to run in.

In the **Keyboard shortcut** field, you can define a keyboard shortcut (such as “Ctrl+M”) that inserts the virtual CD automatically. If an autostart program has been defined for the CD, it runs automatically when the keyboard shortcut is pressed.

If you specify a drive letter under **Insert the virtual CD automatically in this drive**, the virtual CD is inserted in that drive as soon as it has been successfully created.

If you want to enable a search of the virtual CD contents, select the **Create a catalog for this virtual CD** option. In this case, Virtual CD creates a catalog at the same time the virtual CD is written, which lets you search the contents later without inserting the virtual CD.

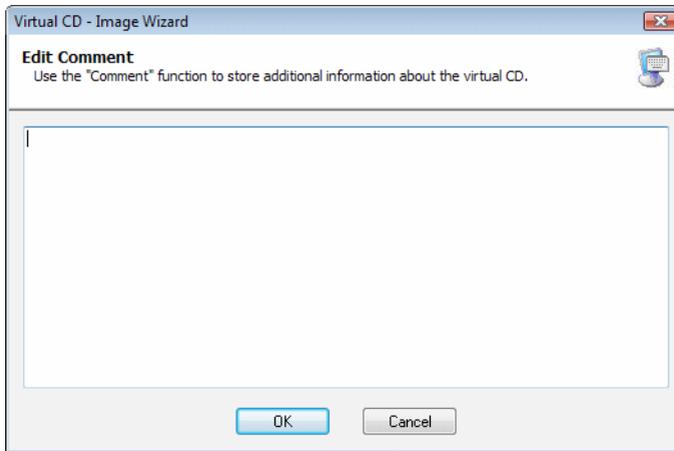
Eject the virtual CD when the user session is ended: When this setting is active, the virtual CD is no longer in the virtual drive after the computer is restarted or when the user logs off.

Many CDs have an autoplay function in their root directory. If you activate the **Suppress autoplay when the CD is inserted option**, Virtual CD is instructed to suppress the program call defined in the autoplay function.



The autoplay function is handled in different ways by different operating systems. For this reason, the “Suppress autoplay...” setting may not have any effect in some cases.

Click on the **CD comment** button to enter additional information about the virtual CD. The Comment text is limited to 2047 characters:



5

Once you have configured all the settings you need on this page, click on **Finish** to run the Image Writer and create the virtual CD.

Creating an Audio CD

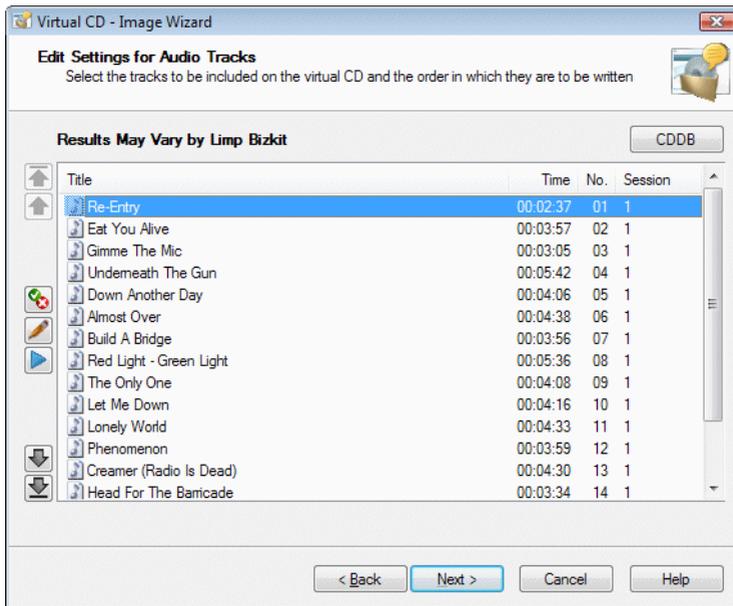
An example of the procedure for creating an audio is given in the following, with explanations of all the Image Wizard settings that are not available when making a data CD.

1

Select the audio CD you wish to use as the source and place it in your physical CD-ROM drive. If an audio player starts up automatically after you insert the CD, shut it down before continuing.

2

Run the Image Wizard and click on **Next >** to open the **Edit Settings for Audio Tracks** dialog.



The next window shows all of the audio tracks on the source CD.



Some CD formats (e.g., CD-Extra) include a data track in addition to the audio tracks. This is shown here as well.

If you simply click on **Next >** at this point, all tracks are included on the virtual CD without modification. This is the recommended procedure when making a virtual CD from a software CD.

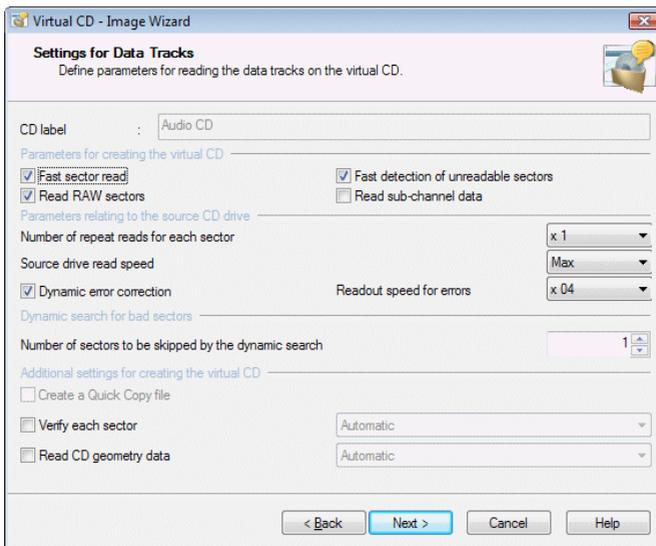
If you are making an audio virtual CD, on the other hand, you may wish to exclude certain tracks, or change the order of the tracks. The buttons for deleting and moving tracks are located next to the track list.



If CD information was downloaded from CDDb, the track titles are shown here automatically. Otherwise, you can click on **Play** to play individual tracks.



Once you have chosen the desired tracks and put them in the order you want, click on **Next >** to configure settings for the audio tracks.



Audio tracks are stored as files that are 1-to-1 copies of the tracks on the original CD, and must be read in raw mode. This is why you cannot change the **Read raw sectors** setting.



You can modify any of the other settings, but doing so will not have any advantage for the resulting virtual audio CD.

4

Click **Next >** to open the **Target** dialog.

The target path and related data are defined here, just as when you create a data virtual CD.

5

In the last step, you can configure additional settings in the **Virtual CD Properties** dialog.

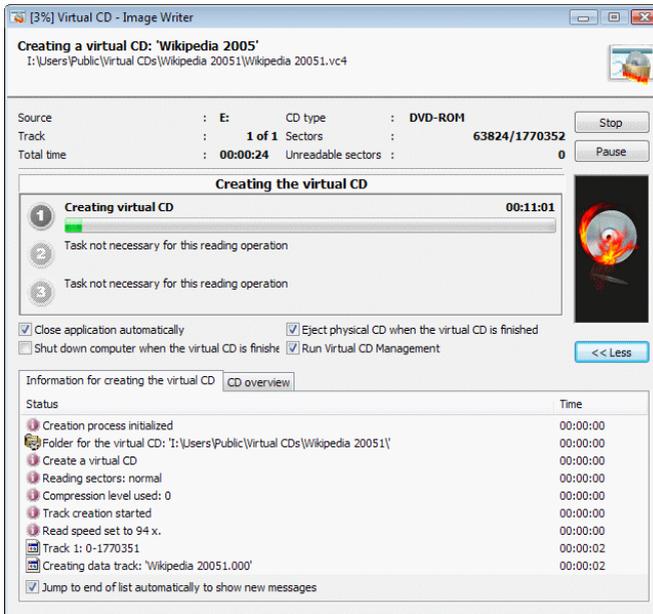
The same options are offered here as are available for creating data CDs, with the exception of the **encryption** option. Audio CDs cannot be encrypted.

6

Once you have configured all the settings you need on this page, click on **Finish** to run the Image Writer and create the virtual CD.

Image Writer

No matter what kind of virtual CD you are making, it is the Image Writer that actually puts it together.



The Image Writer keeps you informed of the different steps in progress while it is making a virtual CD. You have the option of canceling the procedure or stopping it momentarily (“Pause”), as well as the following options:

- **Close application automatically:** Shuts down the Image Writer when the virtual CD is finished.
- **Eject physical CD when the virtual CD is finished**
- **Shut down computer when the virtual CD is finished**
- **Run Virtual CD Management**



If the Image Writer is started up by a Virtual CD Job, these options are not available.



If you know the build process will take a long time – for example, when making an image of a CD that has non-standard formatting – we suggest starting the build process in the evening, when you will not be needing the computer for anything else, and activating the “Shut down computer...” setting.

Using Copy Templates

A copy template stores all of the settings configured to create a virtual CD from a particular source CD. When you use the template, the settings it contains are loaded in the Image Wizard. This means you can save the settings you need for certain CDs, or types of CDs, for future use. There are two types of template:

System copy templates: These are copy templates that come with your Virtual CD program.

User copy templates: These are copy templates that you create.

The following templates are included with the Virtual CD program:

v9 – Automatic copy: This template uses the results of the CD analysis that the Image Wizard performs when it determines the optimum settings for creating the virtual CD.

v9 – Normal copy: Template for creating normal virtual CDs. In many cases, this template is all you need for creating a virtual CD.

v9 – ISO copy: Create an ISO image. No folder is created when Virtual CD makes an ISO image.

v9 – Full copy (Raw, Sub-channel): Use this template when you want to read all data on a CD.

v9 – CD Geometry copy: Reads the CD geometry when creating a virtual CD.

v9 – Unreadable block copy: Template for reading CDs that have visible blocks of unreadable sectors.

v9 – Exact copy: For an exact readout of the CD. With the settings in this template, the source CD is read one sector at a time. This takes longer, but is more precise than reading data in blocks.



If the **v9 - ISO copy** template is selected for a CD that cannot be written as an ISO image (such as an audio CD), the Virtual CD program automatically creates a normal virtual CD.



The default setting is **v9 – Automatic copy**. This template generally configures all of the settings necessary to make a virtual CD. In some cases, however, non-standard formats of certain CDs might not be detected. When this is the case, select a different copy template or activate the Expert Copy Mode to configure settings manually.



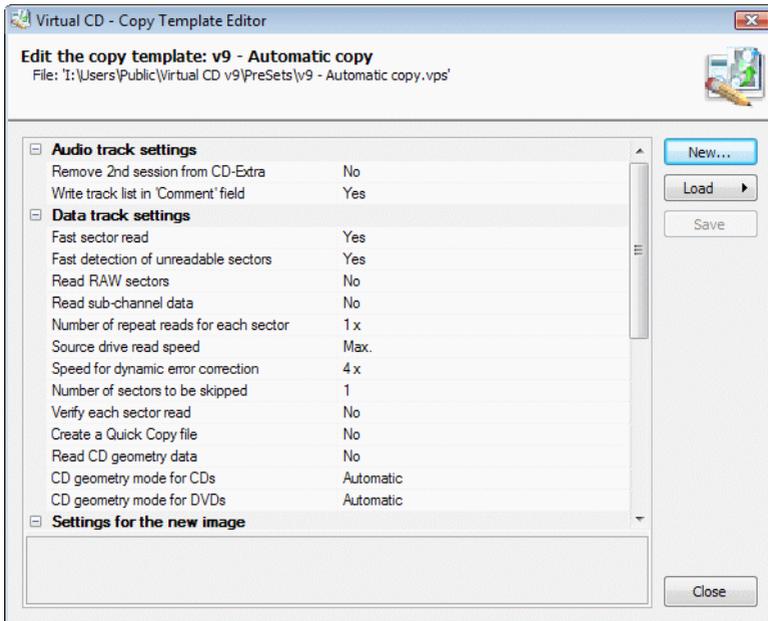
The **v9 – Normal copy** template is the template used when you compose a CD with the **Virtual CD Editor**.

To view the available copy templates, open the **Copy templates** overview in the administration window of your **CD Management** program. You can also edit and delete copy templates in that window.



If you delete a system copy template, it is created again the next time you make a virtual CD.

Use the **Copy Template Editor** to edit copy templates. You can open the Copy Template Editor from the **Results of Analysis** page of the Image Wizard, the Toolbox, or the Copy Templates overview in CD Management.



The settings in this list are the same as those available in the Image Wizard, with the exception of settings that require user input (such as a password). You can select a value and change it as desired. A description of the selected value is shown below the list.

The following settings can only be configured using a copy template:

Remove 2nd session from CD-Extra: Activate this option if you do not want to include the data track from a CD-Extra CD. The resulting virtual CD is an audio CD.

Write track list in 'Comment' field: Select this option to have Virtual CD write the list of track titles in the **Comment** field of the virtual CD properties.

Overwrite existing virtual CDs: This setting defines whether or not an existing virtual CD is automatically overwritten when a new virtual CD with the same name is created:

- **No:** A number is appended to the name of the new virtual CD, and the existing virtual CD remains unchanged (default setting).
- **Yes:** Any existing virtual CD with the same name is overwritten – no warning or prompt for confirmation is given.

Overwrite settings based on CD analysis: Before a virtual CD is created, the Image Wizard runs an analysis to determine the optimum combination of settings for the process. If you use a copy template, any settings defined differently in the template are overwritten by the settings determined in this analysis. If you do not want the template settings to be overwritten, select **No** for this option.



In general, you can leave it up to the Virtual CD program to configure the settings. If you do create a copy template, however, and you want to make sure those are the settings used, then set the **Overwrite settings based on CD analysis** option to **No**. Otherwise, Virtual CD might overwrite your copy template with other settings, based on its analysis of the source CD.



If you use a large number of different folders for your virtual CDs, you might want to make templates with specific **Target folder** and **Add to** settings; this way, your new virtual CDs automatically are stored in the right directory based on your choice of copy template.

Use the buttons on the right to create a new template, open an existing template, or store changes in the active template.



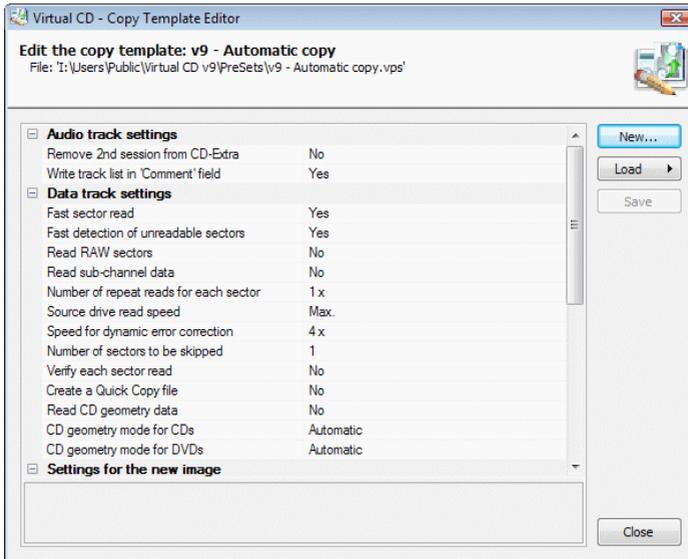
There may be values in your copy template that are not compatible with a given CD type or CD drive. In this case, Virtual CD corrects the settings when the copy template is loaded for use. For example, if the template indicates that raw data is to be read, but the source is a DVD, Virtual CD switches off the **Read raw data** option, since this is not possible for DVDs.

Creating a Virtual CD Copy Template

If the copy templates that come with the program do not cover all your needs, you can create your own copy templates. The procedure for this is demonstrated below. The copy template created in the following example automatically overwrites existing CDs without prompting for confirmation.

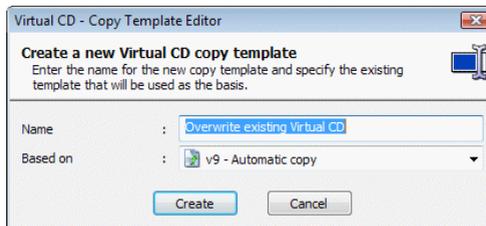
1

Open the Toolbox and run the Copy Template Editor. The editor automatically loads the **v9 – Automatic copy** template.



2

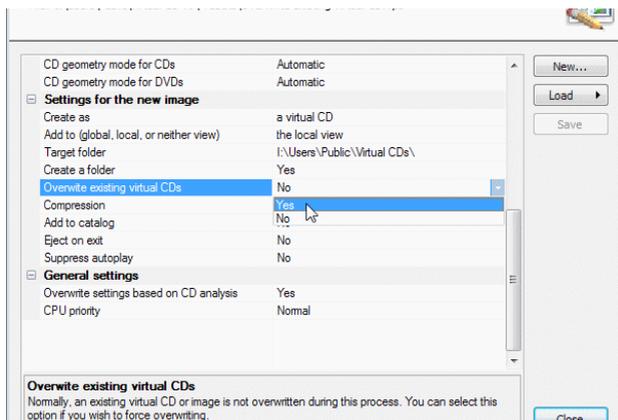
Click on **New** to add a new copy template. This opens a dialog for entering a descriptive **Name** for the copy template; in our example, “**Overwrite existing virtual CD.**”



Under **Copy from**, you can specify an existing copy template to be used as a basis for your new template. In our example, we leave this field unchanged. Click on **Create** to generate the copy template.

3

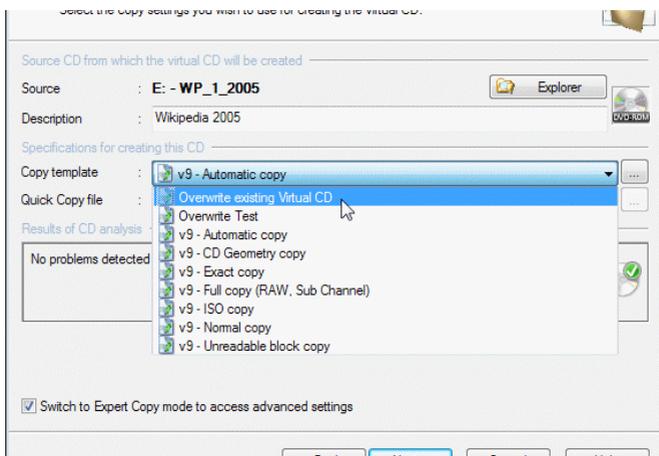
The new copy template is created and automatically loaded in the copy template editor. Select the **Overwrite existing virtual CDs** option and then select **Yes**.



Click on **Save** to save your changes, and then close the copy template editor.

4

You can now use your new copy template. To test it, place a CD in your computer's CD drive and run the program for creating a virtual CD. On the **Results of Analysis** page in the Image Wizard, select your new copy template.



Working in Easy Copy Mode, simply click **Finish**. The existing CD is overwritten. This is particularly useful for making images from CDs with content that is regularly updated, such as catalogs or encyclopedias.



Keep in mind that, with this setting, any existing virtual CD that has the same name as the new virtual CD **will be overwritten** with no further warning!

This example shows how easy it is to create new copy templates. We recommend not creating too many templates, as it might become difficult to keep track of them all. It is a good idea to give your copy templates descriptive names, so you can tell at a glance what settings they configure even after a good deal of time has passed.

Quick Copy - The Fast Way to Make Virtual CDs

You have the option of creating a Quick Copy file at the same time you make a virtual CD. To do this, activate the **Create a Quick Copy file** option on the **Settings for Data Tracks** page of the Image Wizard.



When you create a virtual CD with the **v9 – Automatic copy** template, Virtual CD decides whether a Quick Copy file is made or not.

A Quick Copy file stores various parameters that are detected during the build process when you make a virtual CD. The data in a Quick Copy file includes, among other things, information on the following:

CD geometry data

Unreadable sectors

CD-Text information

Sub-channel data

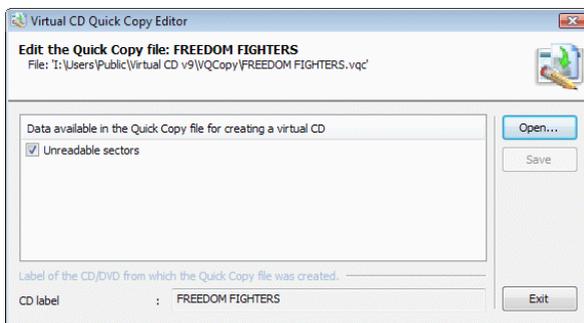
Verification of sectors



For each of these forms of data, the information is stored in the Quick Copy file **only** if the settings configured for making the virtual CD enabled readout of that data.

You can view and edit Quick Copy files in the Quick Copy Editor. You can open the Quick Copy Editor from the **Results of Analysis** page of the Image Wizard, the Toolbox, or the Quick Copy Files overview in the CD Management administration window. With Quick Copy Editor, you can deactivate certain items in the Quick Copy file to have them skipped when the next virtual CD is made using that file. This is especially useful, for example, if a Quick Copy file contains a great deal of

information about a CD and you are not certain that all of this information is correct.

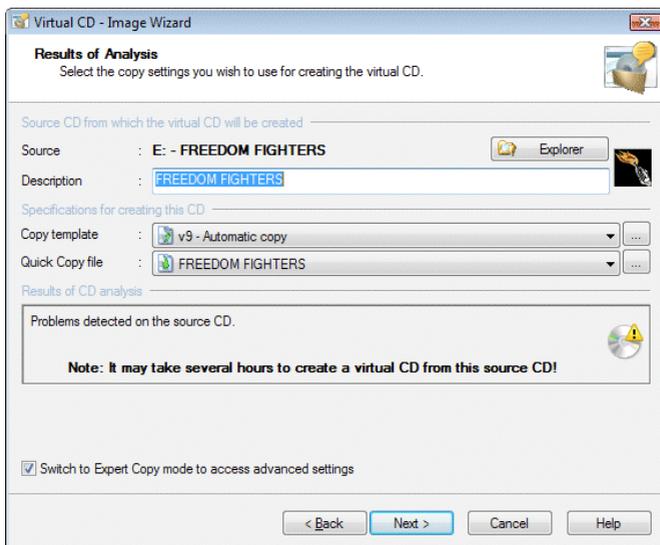


When the next virtual CD is made using this file, only the data marked with a checkmark in this list will be used. Data without a checkmark is only deactivated, not deleted from the Quick Copy file; you can activate these items again as needed.



Virtual CD v9 cannot modify Quick Copy files that were created with Virtual CD v6. You can view the file content in the editor, but you cannot make any changes or enter additional data. Quick Copy files made with Virtual CD v7 or later can be loaded and edited.

Every Quick Copy file is unambiguously associated with the physical CD that was used as the source for the virtual CD. It is not possible to select a Quick Copy file in the Image Wizard that does not match the source CD.



If a Quick Copy file is found for a given source CD, it is automatically displayed in the Image Wizard. When you use a Quick Copy file, the virtual CD is completed far more quickly, since the Quick Copy file contains data that would otherwise have to be read from the source. For example, unreadable sectors in the Quick Copy file are simply copied during readout of the physical CD, and the time-consuming process of reading the unreadable sectors is skipped.

Use of Quick Copy files has the following advantages:

- Virtual CDs are created much more quickly.
- If a viable virtual CD was made when the Quick Copy file was created, you know any virtual CDs made with this file will work.
- All data required for writing the virtual CD (e.g., geometry data) will be available when needed, regardless of the CD drive's readout capabilities.



Do not make more than one Quick Copy file for each CD, since you will never need more than one Quick Copy file for any CD. If you find that a certain virtual CD doesn't work when the creation process is finished, make sure you delete the Quick Copy file, since it would only serve to create a virtual CD that doesn't work. To delete a Quick Copy file, open the **Quick Copy files** overview in the CD Management administration window.



To enable an optimized build process when you make a virtual CD, the settings in the Quick Copy file might overwrite those configured by the active copy template.



You can pass Quick Copy files back and forth among your friends or co-workers. If you know someone who has a Quick Copy file for a CD from which you want to make an image, we recommend using their Quick Copy file. The build process will be faster than it would if you had to work out the required settings on your own. To use a Quick Copy file that you have received from someone else (e.g., via e-mail), just copy it to the folder specified in your system for Quick Copy files. Virtual CD will automatically recognize the source CD for which CD the Quick Copy file was made.

One-Click Copy

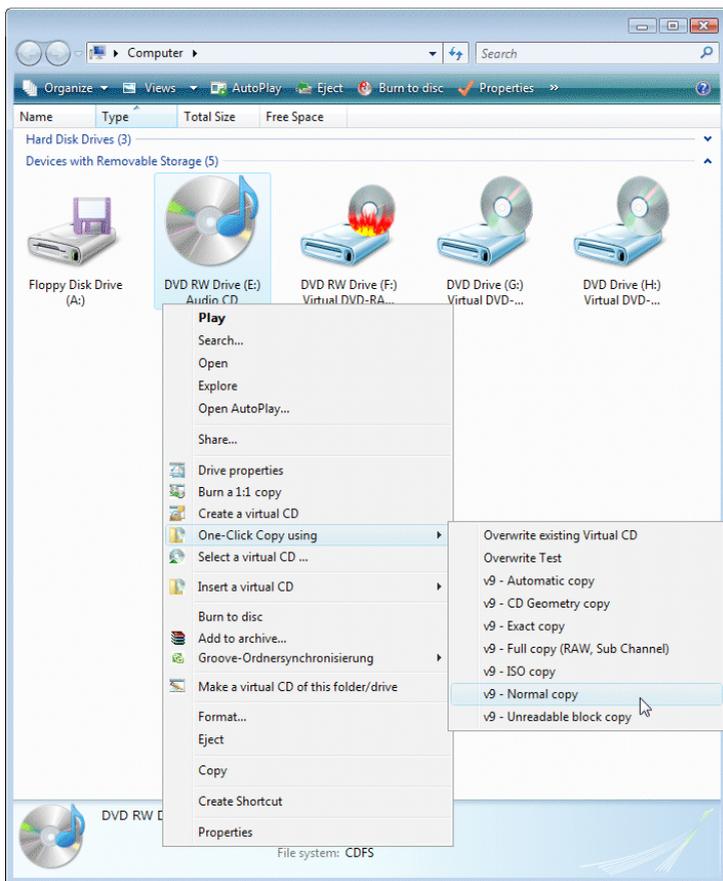
The **One-Click Copy** technique is the fastest way to make a virtual CD.



Just place a CD in the CD-ROM drive and open **My Computer** in the Windows Explorer.

2

Now right-click on the CD drive. This opens a shortcut menu; select **One-Click Copy using...** and then select the copy template you wish to use for this virtual CD.



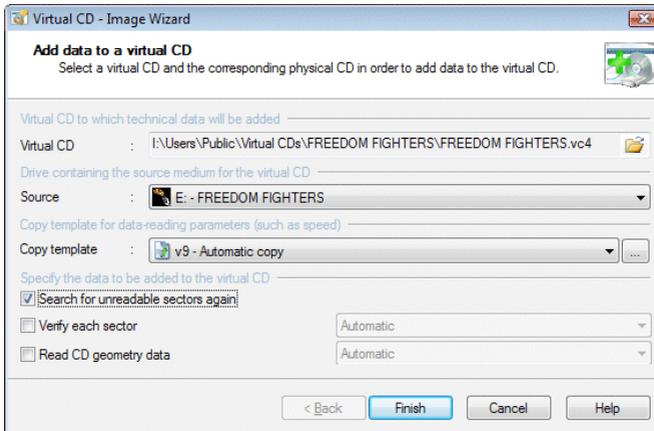
That's it! The Image Writer opens and begins the build process for making the virtual CD with the settings specified in the copy template.



The same function is available in the **Physical CD/DVD Drives** administration window in CD Management.

Adding Data to a Virtual CD

Virtual CD has powerful analysis functions that enable it to make viable images from source CDs *almost* every time. If a virtual CD you have made using Virtual CD v9 does not work, it might help to add the technical data such as CD geometry data or unreadable sectors, or to verify each sector. Now you can perform these analysis steps retroactively, without having to repeat the entire process for creating the image. All you have to do is open the Image Wizard in “rebuild” mode; for example, by selecting **Add technical data to a CD** in the Quick Start menu, and insert the source CD in the physical drive.



To add data to an existing virtual CD, configure the following settings in the **Add Data to a Virtual CD** dialog:

Virtual CD: Select the virtual CD to which you wish to add data.



Data can be added only to data CDs and DVDs.

Source: Drive containing the CD from which the virtual CD was originally made. When you select the drive, Virtual CD runs its analysis operation to determine which data should be added.



You can skip the analysis of the CD if you already know which data you want to add.



This operation can only be carried out using the CD from which the virtual CD was made. If a different CD is on the specified drive, the process cannot be started.

Copy template: The copy template defines certain values that are otherwise configured under **Settings for Data Tracks**.



Keep in mind that most of the settings in the copy template (such as “Target”) will not have any effect, since the virtual CD already exists.

The last step is to select the data to be added:

Search for unreadable sectors again: In some cases, not all unreadable sectors are found when reading out CD data. Select this option to search the CD for unreadable sectors again. Any more unreadable sectors found are added to the virtual CD. Unreadable sectors that had already been detected are not read again.

Verify each sector: Select this option to verify each sector and add the resulting data to the virtual CD.

Read CD geometry data: Select this option to read out the geometry data and add it to the virtual CD.

Once all settings have been configured, click **Finish** to begin reading out data. The Image Writer opens and reads out the specified data.

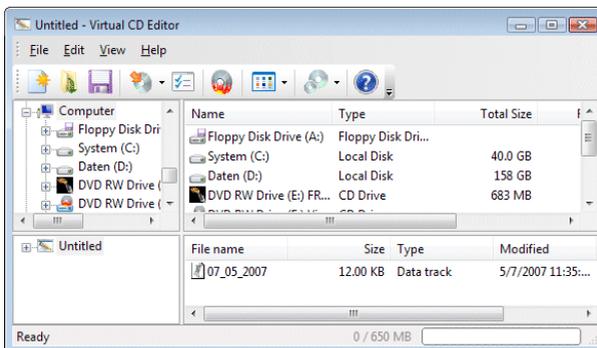


If you are using this feature to repair a virtual CD that did not work, it is a good idea to use a different drive than the one originally used to create the virtual CD. Another way to repair the virtual CD is to use a copy template that specifies the mode for data readout, rather than having Virtual CD automatically select a mode.

Composing Your Own Virtual CDs

Making a Customized Virtual CD

With the Virtual CD Editor you can create customized CDs with your choice of content. For example, if you want to burn a customized physical CD, you can use the same content to make a virtual CD first so you can test your new CD without using up a blank medium.



The Editor program window is divided into four panes: the view on the upper left shows a directory tree with all of your system's drives, including their folder structure, and the contents of the folder selected here are shown in the upper right-hand pane.

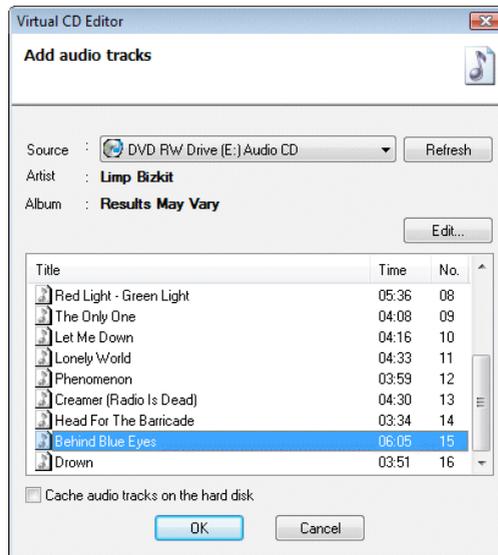
The lower left-hand pane shows the contents of the virtual CD currently being created, and the lower right-hand pane shows the contents of the selected track.

The "CD size" toolbar button lets you select the size of the CD to be created. The size must be equal to or greater than the volume of data to be written.



If you plan to burn this CD on a physical CD later, make sure the size you set here matches that of the blank CD.

To add files to your CD, you can either use drag-and-drop or click on the **Add** button, which opens a list in which you can specify the type of element (audio tracks, directory or file) you wish to add. Once you specify the type, a dialog opens for selecting the element. The dialog shown here, for example, opens when you select **Audio tracks**:



If the physical drive selected in the upper left-hand pane of the Editor window contains an audio CD, you can select the desired tracks from the list in the lower portion of this window.

The **Cache audio tracks on the hard disk** option is especially useful if your virtual CD will contain audio tracks from a number of different source CDs. When you

activate this function, the selected track is immediately cached on your hard disk so you do not need to insert the source CD again later, when you run the Image Writer to write the virtual CD.

Once you have put together all of the data you wish to include on your virtual CD, click on the **Create** button to write the virtual CD.

Alternatively, you can select **Save as...** from the **File** menu and store the data in a 'definition file' (*.vcx.). Then you can load this file in the Editor at a later date to create your virtual CD.



The *.vcx file stores only the structure of the virtual CD you have defined (references to files and folders), not the data that the virtual CD will contain. This means, for example, if you save a definition file that refers to the "C:\Pictures" folder, and then modify the contents of that folder before making the virtual CD, the virtual CD will contain the modified content rather than the content that existed when you saved the definition file.

Editing a Virtual CD

You can use the Editor to modify existing virtual CDs. To open a virtual CD for editing, begin by selecting it in the CD Management window. Then right-click on it to open a shortcut menu and select **Edit**. The Editor program opens and loads the selected virtual CD.



Only data CDs can be edited. If the selected CD is of a type that cannot be edited, the **Edit** item cannot be selected.



If the virtual CD you load for editing already has multiple sessions, you need to select the session you wish to edit. The most recent session shows the current status of the CD content.

You can now modify the content of this virtual CD. For example, you can remove files that you don't need, such as demo software, or adapt the autoplay function to your preferences. When you select the **Create** command, your changes are simply written in a new session. This is why the process usually doesn't take very long. The virtual CD is now a multi-session CD.



Do not edit virtual CDs that are made with non-standard formatting (such as games CDs). If you do, the virtual CD will no longer run properly.

Working with Virtual CDs

Inserting a Virtual CD

To make it as easy as possible to insert a virtual CD, we have integrated the “Insert” command in a number of different areas. You can use any of the following to execute this command:

- CD Management
- Virtual CD sidebar
- the Quick Start utility
- A shortcut menu in the Windows Explorer (generated by the VCD Explorer Extension)
- A Virtual CD script
- A desktop shortcut that runs the VCD command line program
- A Virtual CD “snapshot” script



When you double-click on a virtual CD in CD Management, that CD is either inserted in its default drive or inserted in the first available drive, or its properties are shown, depending on your setting in the **View** menu, under **Double-click on a virtual CD...**

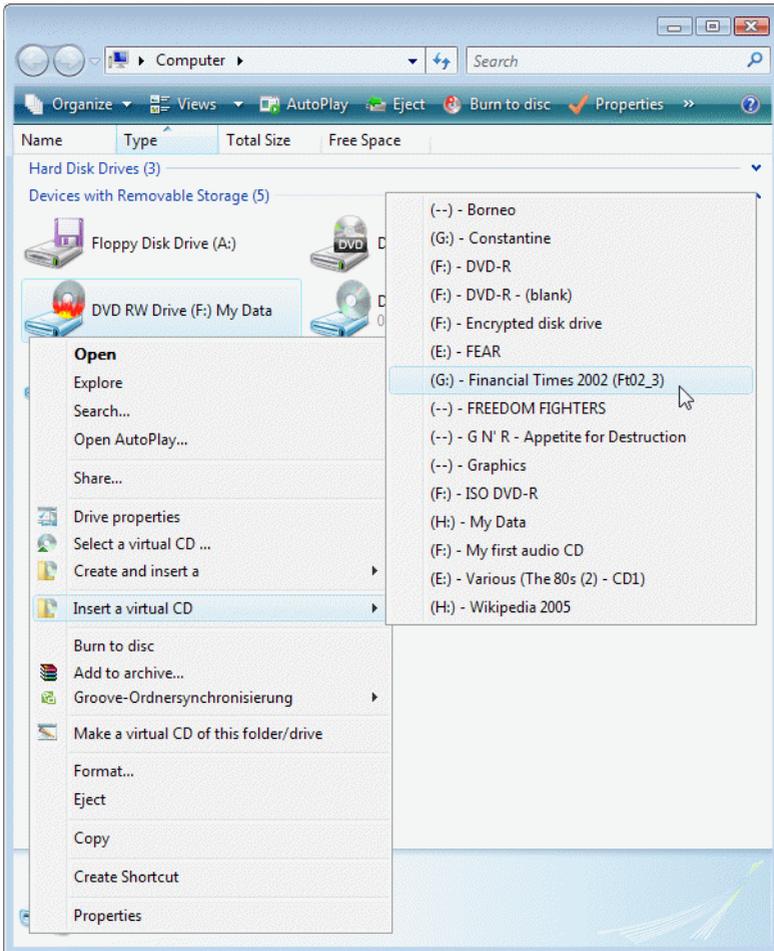
In the following example, we demonstrate the method using the Windows Explorer extension.

1

Open **My Computer** in the Windows Explorer.

2

Select the desired virtual CD drive and right-click on it. Select **Insert a virtual CD** and then choose the virtual CD from the list that opens.

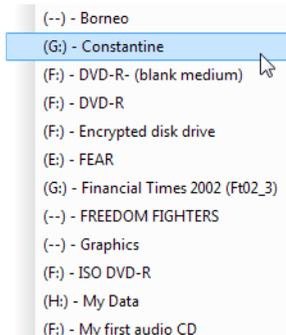


The virtual CD is now inserted in the CD drive and is ready for use.

Default Drive

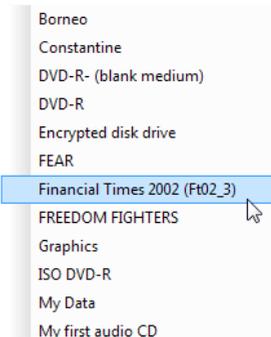
The default drive for a virtual CD is defined the first time that CD is inserted in a virtual drive. This drive can be used to have the virtual CD inserted automatically. Virtual CDs can generally be inserted in any virtual CD drive, but some programs will not function properly unless their CD is in a particular drive. Virtual CD lets you designate this drive – usually the drive from which the program in question was installed – the “default” drive and have it displayed next to the virtual CD name when shown in the Quick Start menu and the Explorer menus. This makes it easier to insert the virtual CD in the correct drive every time.

This example shows the Quick Start menu with this function activated:



To deactivate this setting, open the CDs/CD Drives page of the Settings program and deselect the **Show default drives defined for virtual CDs in Quick Start menu and Explorer extension** option.

This example shows the Quick Start menu with this function deactivated:



You can reactivate this function at any time in the virtual CD properties.

Shortcuts for Fast Access

Desktop shortcuts are handy for virtual CDs that you use often, but don't want to leave continually inserted in a drive, such as a telephone book on CD. The shortcut lets you access the virtual CD directly, without having to run any other program first. Your Virtual CD **CD Management** program has a command for creating a shortcut quickly and easily.



Open CD Management and select the virtual CD for which you want to make a shortcut.



Right-click on the virtual CD and select **Create a desktop shortcut** from the menu. The shortcut is created immediately. The **Description** field of the virtual CD's properties supplies the name of the shortcut.



My first virtual CD

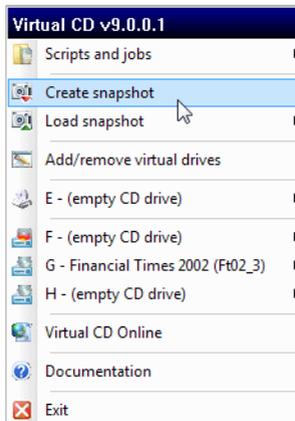
The icon generated by Virtual CD for the shortcut is now visible on your desktop. Double-click on it to insert the virtual CD. The virtual CD name is passed as an argument to the command line program (**vc8cmd.exe**), which executes the "Insert" command on the selected CD.

Snapshots

Snapshots let you make a record of which virtual CDs are in which drives at a given moment, and recreate this state when desired. You can run this program from CD Management, the Quick Start utility or the Virtual CD sidebar. Snapshots are extremely easy to make and use. The following description uses the Quick Start utility to create and load snapshots.

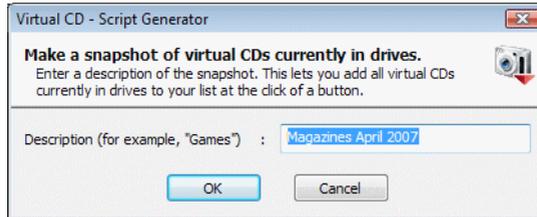


Insert the virtual CDs that you wish to have included in the snapshot. Right-click on the Quick Start icon to open the menu and select **Create snapshot**.



2

This opens a dialog for entering a description of the snapshot. Enter a meaningful description, so that you can recognize later which CDs the snapshot will insert. Then click **OK** to create the snapshot.

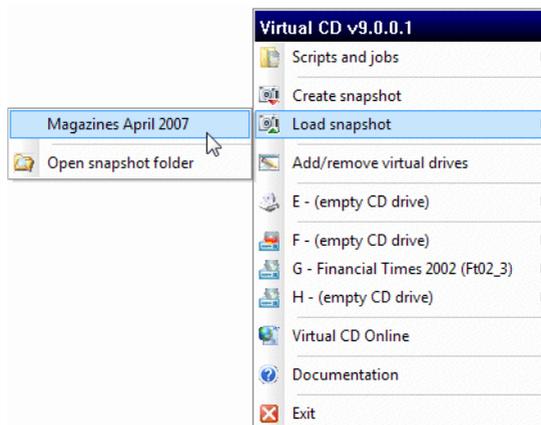


That's all there is to it.

To see exactly what happens when you load a snapshot, eject all virtual CDs from all drives first, or insert some virtual CDs that are not included in the snapshot.

1

Right-click on the Quick Start icon to open the menu and select **Load snapshot**. This opens a list of snapshots to choose from.



2

The prompt to confirm lists all of the virtual CDs that will be inserted. Click on **OK** to confirm your choice and insert these virtual CDs.



A snapshot recreates the state that was current when the snapshot was made. Virtual drives that were empty when the snapshot was made will be empty again once the snapshot has been loaded.

That's it! In just a moment or two, the state of virtual drives active when the snapshot was made is recreated.



Snapshots save the state of all virtual drives. This includes both the drive letter and the virtual CD (if any) in the drive. If you change your virtual drives (for example, change the drive letters of any affected drives) after having created a snapshot, it might not be possible to recreate the desired state by loading that snapshot.

To delete a snapshot, right-click on the Quick Start icon to open the menu and select **Delete snapshot**. This opens a submenu; select **Open snapshot folder** from this menu to open an Explorer window listing all existing snapshots. Select the desired snapshot script and delete it.

Ejecting a Virtual CD

There are almost as many ways to eject a virtual CD as there are to insert it. You can use any of the following to execute the “Eject” command:

- CD Management
- the Virtual CD sidebar
- the Quick Start utility
- a shortcut menu in the Windows Explorer (generated by the VCD Explorer Extension)
- a Virtual CD script



When creating a virtual CD, you can define whether the CD is automatically ejected when a session is ended; i.e., when the user logs out or when the computer is shut down. You can also activate or deactivate this option later in the Properties of the particular virtual CD, or for all virtual CDs in the Virtual CD Settings.

Three Types of Drive for Virtual CDs

Having explained in the previous sections how to insert and eject virtual CDs, we shall now take a closer look at the drives you can use with these CDs. Virtual CD lets you insert virtual CDs in the following types of drive:

Physical CD drive: Of course you can insert your physical CDs here, but now Virtual CD lets you use this drive for virtual CDs as well. This “overwrites” any physical CD in the drive. In other words, when you insert a virtual CD in a physical drive, your operating system recognizes only the virtual CD “in” the drive, not the physical CD.

Virtual CD drive(s): You can use these for everyday use (i.e., access to data stored on CD media) of your virtual CDs. You can set up as many virtual drives as you have drive letters available for them.

Virtual burner: This is a special type of virtual drive. You can use it like any other virtual drive, and you also have the option of using it as a virtual burner; for example, to write data from other programs on a virtual blank CD.



You can create virtual burners rather than virtual drives when configuring your Virtual CD program. Please keep in mind, however, that some programs cannot function properly on a computer that has, for example, 8 CD burners. For the best possible compatibility with other programs, create only as many virtual burners as you need. For example, 2 virtual burners and 3 virtual drives are sufficient in many cases.



You can configure your Virtual CD program so that it sets up one virtual burner and no other drives. This is automatically the case when you choose the “quick install” option (for 25 virtual CDs or less) during installation. You can still add virtual drives at a later point, in the Emulation Settings program.

Using a Physical CD Drive

Virtual CD lets you insert virtual CDs in physical CD drives on your computer. You might find yourself wondering:

Why was this feature developed?

Well, it does give you one more drive for virtual CDs than you would have had otherwise. But the reason we developed this feature is because there are still some applications out there – usually older ones – that look for their program CD in the first CD drive, or other specific drive, on the computer. If it does not find its CD in the drive that it “should” be in, the application generally shows a more or less cryptic error message and shuts down. Since virtual drives usually come after the physical drive(s), alphabetically, this problem used to entail changing the drive letters in your system to put a virtual drive at the top of the (alphabetical) list. The

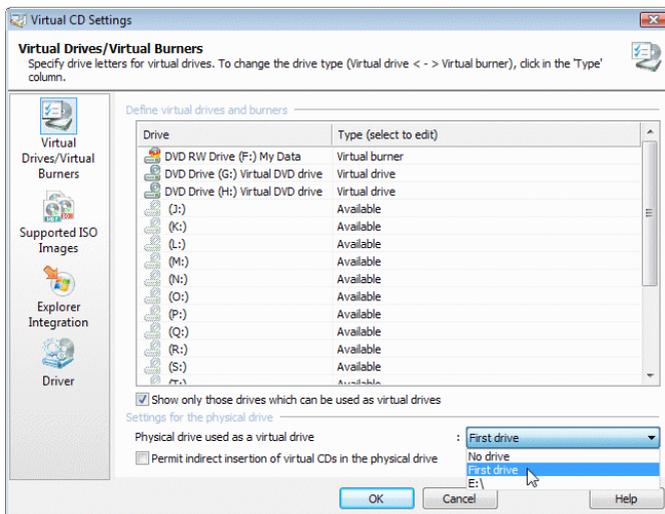
new feature makes it much easier to work with such applications and precludes the need for rearranging drive letters. Thus the answer to the above question is simply:

To make it easier to use software on CDs.

If you do not have any applications that require their CD to be in a particular drive, you can configure Virtual CD so that physical CD drives are used only for physical CDs.

Configuring a Physical CD Drive

If you used the “quick install” feature when setting up Virtual CD, use of a physical CD drive for virtual CDs is already activated. This feature is configured on the **Virtual Drives/Virtual Burners** page of the Emulation Settings.



To use a physical drive for virtual CDs, you need to specify a drive under **Physical drive that can be used for virtual CDs**. You can choose from the following settings:

No drive: Virtual CD does not use any physical drive for virtual CDs.

First drive: Virtual CD can use the first physical CD drive when inserting a virtual CD in the first available drive.

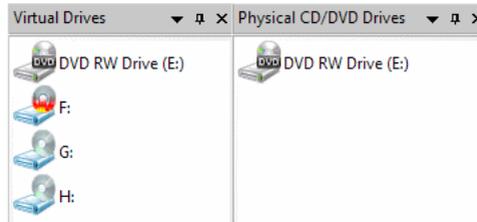
<Specific drive letter>: Virtual CD can use the specified physical CD drive when inserting a virtual CD.



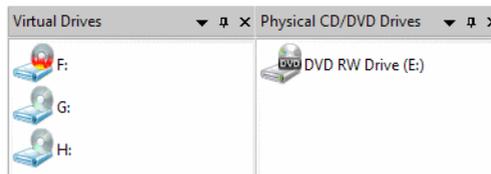
When you change this setting, any virtual CD in the affected drive is automatically ejected.

If a physical drive can be used for virtual CDs, it is included in the list of virtual CD drives and can be selected for inserting a virtual CD.

Example of a system configured for use of a physical drive with virtual CDs:



The same system **without** the use of physical drives permitted for virtual CDs:



When you insert a virtual CD – if you have not explicitly assigned a drive for it, and are not inserting it by drag-and-dropping it to a drive – it is automatically inserted in the first available virtual drive. If no virtual drive is available, the virtual drive with the letter closest to “A” is used, and the CD in it is automatically ejected. (This is referred to in the dialog depicted above as “indirect insertion”). Even if your physical drive is enabled for virtual CDs, it is not included among the virtual drives when the program seeks a drive in which to insert a virtual CD. To have the physical drive included among possible drives when the “Insert” command is called, activate **Permit indirect insertion of virtual CDs in the physical drive** in this dialog.



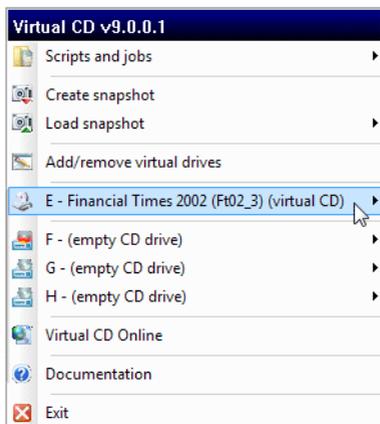
Keep in mind when you activate this setting that a virtual CD in the physical drive will “overwrite” any physical CD in the same drive. No matter which or how many physical CDs you insert or eject, Windows detects only the virtual CD in that drive. This can lead to confusion, which is why we recommend only using the physical drive for a virtual CD when this is necessary in order to run an application.

Important Considerations

– A virtual CD in the physical drive “overwrites” any physical CD in the same drive. No matter which or how many physical CDs you insert or eject, Windows detects only the virtual CD in that drive. This can lead to confusion, which is why we recommend only using the physical drive for a virtual CD when this is necessary in order to run an application.

When the physical drive contains a virtual CD, the designation (**virtual CD**) is shown in your Virtual CD programs next to the CD listing. The following screen

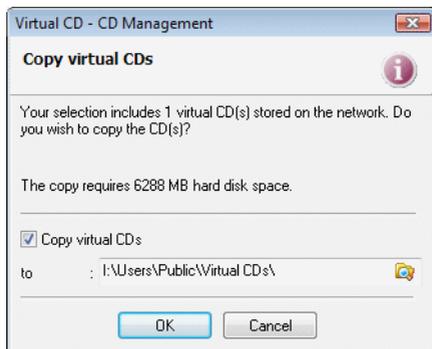
capture shows the drive menu of the Quick Start utility with a virtual CD in the physical CD drive:



Copying Virtual CDs

In some cases you might find it necessary or useful to copy virtual CDs. For example, you may want to copy all your virtual CDs from one hard disk to another, or copy a virtual CD from a client workstation to a server. There are two methods for copying virtual CDs with your Virtual CD program:

Directly in CD Management: You can move virtual CDs using drag-and-drop; for example, to move virtual CDs to a different folder. When you use Virtual CD in a network, you can move virtual CDs from the **Global** to the **Local** view and vice versa. A dialog opens to ask you where you want the CD(s).



If you want to make a virtual CD available to over the network, you need to copy it to a central location (e.g., a server) designated by a UNC path. If the virtual CD is stored on a workstation in a location designated by a drive letter, it cannot be seen on other network stations.

Using the Copy Wizard: You can use the Copy Wizard to copy any number of virtual CDs from one folder to another. If you run the Copy Wizard from the Toolbox, you have to browse for the desired virtual CDs, add them to the list in this window and specify the **path** to which they will be copied. The Copy Wizard shows you how much space is required and how much is available at the selected destination. The copy process can be started only if there is enough space available.



The process is a little quicker and easier if you run the Copy Wizard from the CD Management program. To do this, select the desired CDs in the CD Management list, right-click on the selection and choose **Copy virtual CDs** from the shortcut menu. This opens the Copy Wizard with the selected CD(s) already loaded in the list. If you right-click on a **folder** in CD Management and open the Copy Wizard, all virtual CDs in that folder are loaded in the Copy Wizard list.

Deleting Virtual CDs

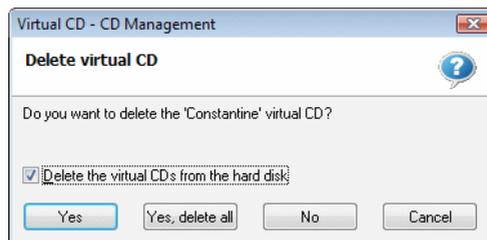
If you have a virtual CD that you no longer need, it is a good idea to delete it, since virtual CDs – especially DVD images – can take up a great deal of space on your hard disk.

1

Run the CD Management program, select the virtual CD you want to delete, and choose **Delete**.

2

A dialog opens, prompting you to confirm the “Delete” command.



If you do *not* select **Delete the virtual CD from the hard disk** before clicking on OK, then the CD in question will remain on your hard disk, although it is no longer displayed in the CD Management program. You can only delete virtual CDs from

the hard disk if you have the required directory and file privileges, and the CD is not currently inserted in a virtual drive.

If you click on **Yes** (or **Yes, delete all**), the selected CD(s) will be irretrievably deleted from the hard disk.

You can also delete all virtual CDs in a specified folder from the hard disk. **Warning:** All virtual CDs will be deleted from the specified folder!

1

Open CD Management, select the folder you want to delete, and choose **Delete**.

2

A dialog opens, prompting you to confirm the “Delete” command.



You can choose from the following options:

Move them to the root directory: All the virtual CDs are moved to the root directory of your Virtual CD installation. In other words, only the selected folder is deleted, and not its contents.

Exclude CDs from display, but do not delete them: The icons that represent these virtual CDs are no longer displayed in CD Management, and the folder is deleted. In other words, these virtual CDs are no longer “known,” or registered, in your Virtual CD program. The virtual CDs are, however, still present on your hard disk.

Delete the virtual CDs from the hard disk: The virtual CDs and the folder are irretrievably deleted from the hard disk.

Click on **OK** to confirm your choice and delete the folder.

Properties of a Virtual CD

When you create a virtual CD, you can define a number of settings affecting the way the CD can be used, such as autostart program, keyboard shortcut, and more. These settings are stored along with other information about the virtual CD (size, CD type, etc.) as **virtual CD properties**.

You can edit the properties of a virtual CD in the corresponding administration window in the CD Management program. To do this, begin by opening CD Management. When you first run this program, the **Properties** window is not in the foreground. Open the **Window** menu and select **Properties**.

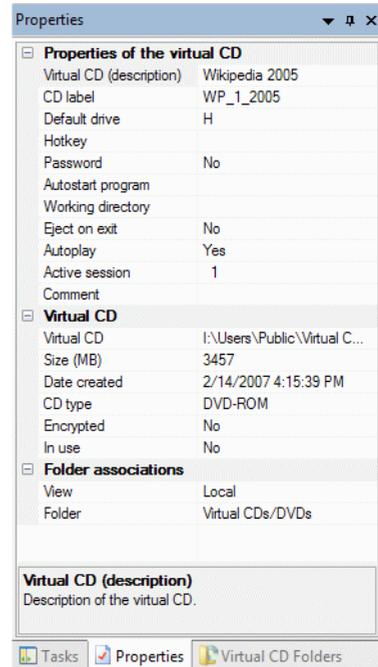
The **Properties** window is divided into the following sections:

Properties of the virtual CD: This section shows the settings configured for the virtual CD. This is the only section containing data that you can edit (in the left-hand column).

Virtual CD: This section shows static information about the virtual CD.

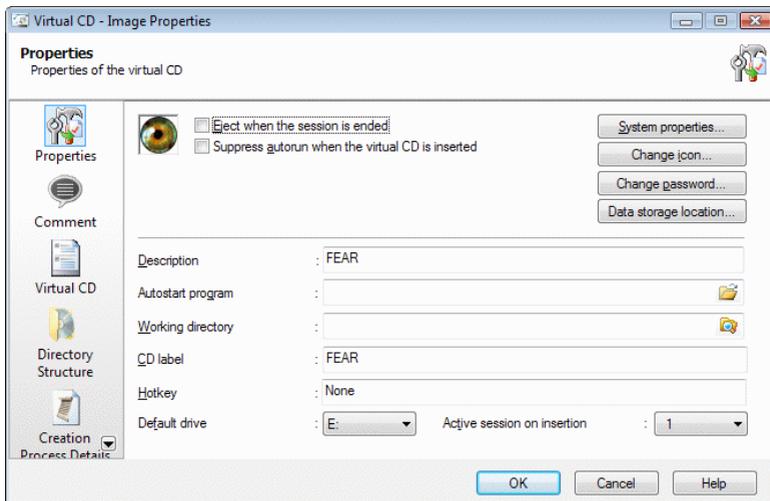
Folder associations: This section lists the Virtual CD folders in which this CD can be found.

Most of these properties are explained in the description of how to create a virtual data CD. One setting you may not have seen before is the **Active session** control. The value here defines which session of a multi-session virtual CD is active when the CD is inserted.



This control can be useful with CD-Extra CDs, because it lets you decide whether the audio segment or the data segment is shown on the computer when this virtual CD is inserted.

Rather than opening the **Virtual CD Properties** administration window, you can edit the properties in the **Image File Properties** dialog. To do this, select the desired CD in CD Management, open the **Edit** menu and select **Properties**.



The **Image Properties** window permits editing of the same values that are contained in the **Virtual CD Properties** administration window, and shows some additional properties as well. Certain information (e.g., a comment) is easier to enter here, as the input fields are larger and give you a better overview than the administration window. Furthermore, values are divided into sections according to topic, so you can locate the fields you need quickly.



You can open the **Image Properties** window from other programs as well, including the Quick Start utility and in the Windows Explorer.

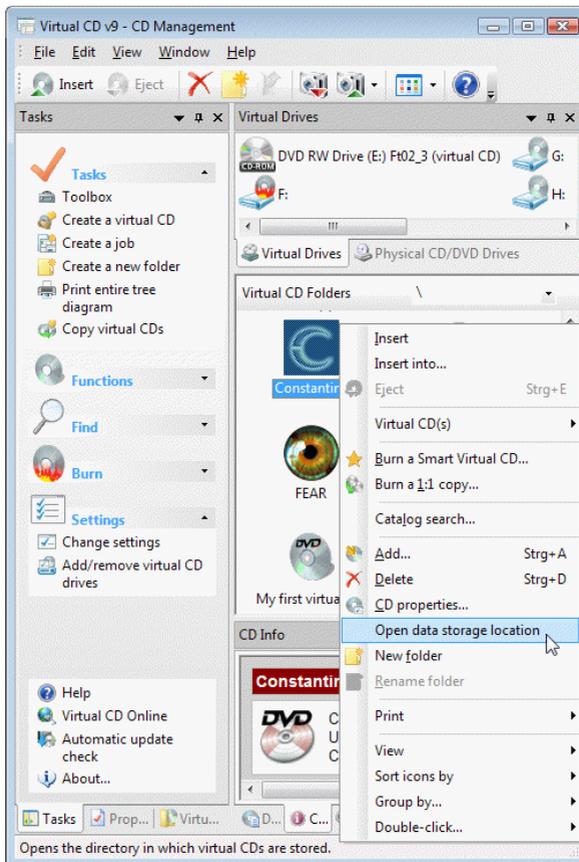
Direct Access to Image Data

The icons representing images are actually shortcuts to image data; Virtual CD ensures that direct access to the files is not required. In some situations, however, you may want to access image data where it is stored.

In the example illustrated below, we have an ISO image that we wish to process with another program.



To access the image, open your CD Management program, find the desired image, select it, and right-click on it. Then select **Open data storage location** from the shortcut menu.



2

This opens an Explorer window in which you can access the ISO file.



You can also open the data storage location from the CD Search tool and the image properties window.

Comparing CDs and Images

If an application on a virtual CD does not function correctly, this might indicate that the data on the source CD was not read out properly. This problem may have been caused by any of the following:

Defective CD drive: This might make the data obtained from the drive invalid.

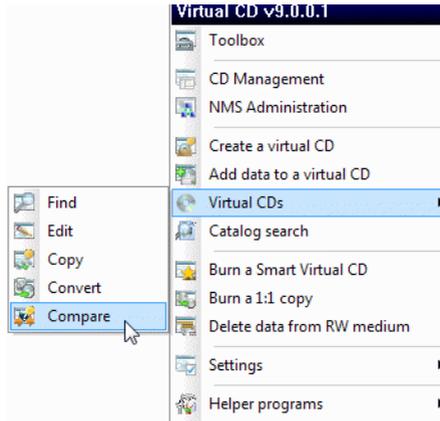
Software from other manufacturers can impede data readout: Some programs install drivers that can cause interference, in a manner of speaking, between a CD drive and a program trying to read from that drive. Such drivers can prevent correct data readout.

Defective CD: If the source CD is defective, its contents might be read incorrectly. For example, if the CD has a large number of defective sectors, the program reading the CD data might not detect all sectors. This can also depend on the quality of the CD drive.

The Virtual CD **Comparison Wizard** lets you test whether all data on a CD has been read correctly – in other words, whether the CD data is identical to the image data. You can use the Comparison Wizard to compare CDs or images to one another, or to compare a CD to an image. The following is a step-by-step description of the procedure for comparing media:

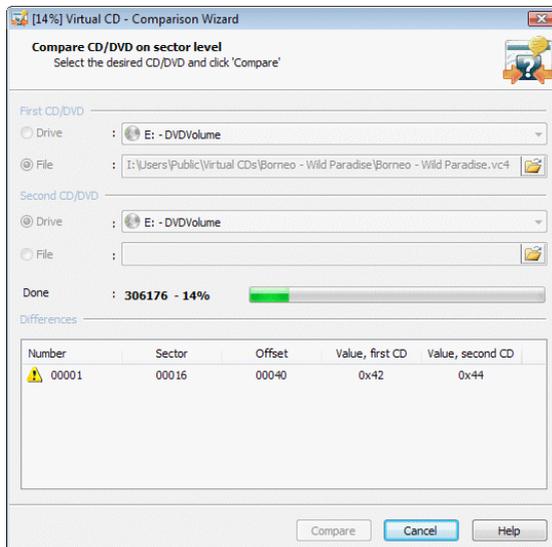
1

Run the Comparison Wizard by right-clicking on the Quick Start icon and select **Virtual CDs -> Compare** from the shortcut menu.



2

In the Comparison Wizard, select the two media you wish to compare and click the **Compare** button to start the operation.



The amount of time it takes to compare media depends on the media selected. If there are a lot of defective sectors, for example, then the comparison can take several hours. All of the differences detected are listed in the lower section of this window.



If you edited the CD label when you created a virtual CD from a physical CD, the Comparison Wizard will detect this as a difference between these two media even if all other data is identical.



The Comparison Wizard can only compare the data stored on CDs. Extended CD data, such as the CD geometry, is not checked.

If differences are detected when you compare a non-functioning virtual CD to its source, create a new virtual CD from that source to solve the problem.



To save time, you could try using the Image Wizard to add technical data to the existing virtual CD, rather than making a new image.

Keeping Track of Your Virtual CDs

You can arrange the layout of your CD Management program any way you like for optimum organization of your virtual CDs. This is useful whether you have only a few or a large number of virtual CDs. If you have a lot of virtual CDs, you can use the print function to help keep track of them all. The print command is available in the **File** menu, the shortcut menu opened by right-clicking on a relevant element (such as a virtual CD), and in the sidebar. You can print the following information:

Virtual CD properties: This function prints all properties of a virtual CD in the form of a data sheet.

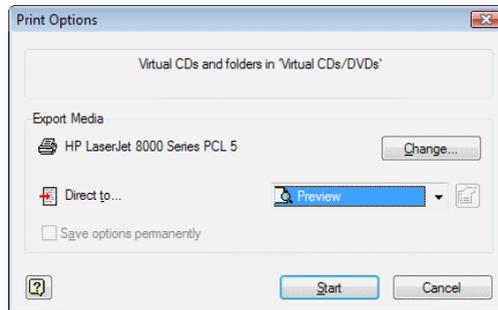
List of virtual CDs: Select this item to print a list of all virtual CDs in the active folder.



To print a list of all virtual CDs in your system, the folder diagram view must be set to **CD Overview**.

Folder diagram: This option prints a diagram of your Virtual CD folders and the CDs they contain. Select **Entire directory structure** to print a diagram of the entire folder structure, or **Diagram of the active folder** to print a diagram of your Virtual CD folders and the CDs they contain.

After you activate the printing function, you are prompted for the destination of the output.



In this dialog you can **change** printers, or select another destination, under **Direct to**:

Printer

Preview

Adobe portable document format (PDF)

Rich text format (RTF)

XML format

As indicated by the list of options, you can either print the output or store it as a PDF, RTF or XML file.



If you store data as a PDF file, you will need the Acrobat Reader from Adobe to view the result. Rich Text Format files can be viewed using the “WordPad” editor that comes with the Windows operating system.



You can use the **Preview** option to test the available output capabilities. This saves paper and helps ensure satisfactory printing results.

User-Defined Views

You can customize the way your virtual CDs are displayed by configuring the virtual CD view in **CD Management** and then saving your view settings. Creating a **user-defined view** has several advantages:

- Have your virtual CDs sorted and displayed according to your choice of criteria.
- Configure a variety of views and select any of them in the **Virtual CD Folders** window at any time.

You choose from the following criteria for sorting your virtual CDs and configuring views:

Search for words/characters: Searches for characters within virtual CD descriptions or comments.

Search by CD type: Searches by CD type (e.g., audio CDs).

Search for local/global CDs/DVDs: Searches for virtual CDs registered in the local or the global view.

Search according to last modification: Searches for virtual CDs modified within a certain time period.

Search in directories: Searches for virtual CDs in a specified directory on the hard disk.

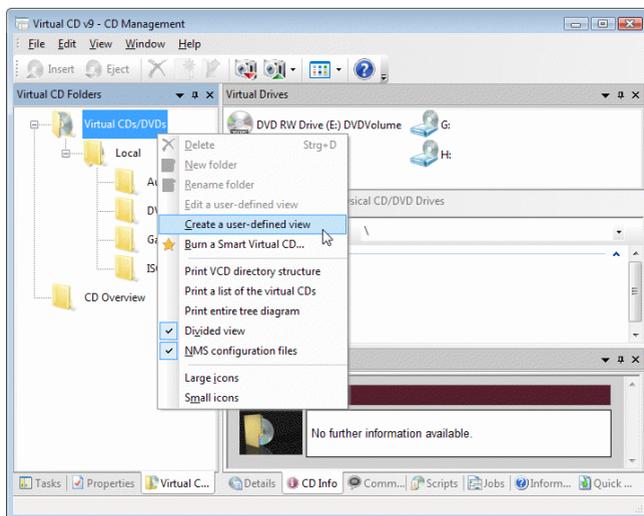


User-defined views can be configured only using virtual CDs that are registered in your Virtual CD program. To search your system for virtual CDs, including those that are not registered, use the CD Search tool.

The following step-by-step demonstration of the procedure for creating a user-defined view will give you a better idea of how this function works.



Begin by running the Virtual CD **CD Management** program and opening the **Virtual CD Folders** window. Right-click in this window and select **Create a user-defined view** from the shortcut menu.

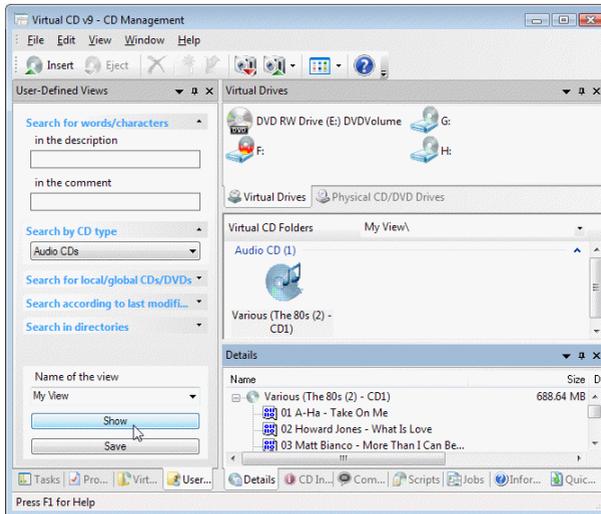


2

This opens a window called **User-Defined Views**. Click on the down-arrow next to the **Search by CD type** field to open a selection list. Select **Audio CDs**.



Following initial start-up of your Virtual CD program, there are a few different types to choose from here. You can also define other types and add them to this list.



3

Now we have entered enough search criteria for our example. Enter a name under **Name of the view** and click on the **Show** button. All audio CDs are displayed. Any time you create a view that you wish to use again in the future, click on **Save** to store it. To use a stored view, open the **Virtual CD Folders** window and select it from the list.

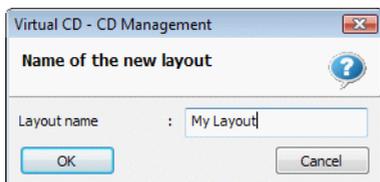
Particularly if you have a large number of virtual CDs, user-defined views make it easier to keep track of them and to find specific CDs when you want them.



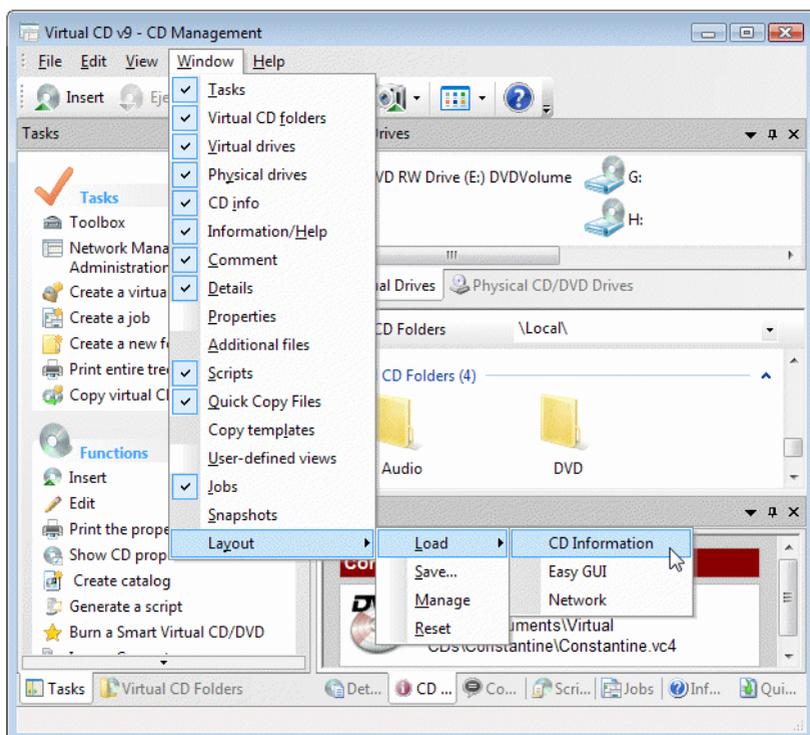
You can use the **Search for local/global CDs/DVDs** option to create a view that shows only local or only global virtual CDs (for example, you could make a view called "Global CD Overview"). This is very helpful for keeping track of virtual CDs in a network.

Using Layouts

To adapt the CD Management window to your needs and preferences, you can re-arrange the administration windows using drag-and-drop, and use the **Window** menu commands to switch individual overviews on or off. Each version of program window arrangement is known as a “layout.” To save your own layout(s), select **Window / Layout / Save** and enter a name for the layout in the dialog that opens.



To use one of the layouts that has been stored, select **Window / Layout / Load / <layout name>**. The menu shows all of the layouts currently available in your system. When you select a layout, the CD Management window information stored in it is loaded.



Virtual CD comes with 3 layouts, available once you install the program:

CD Information: Use this layout to view all of the virtual CDs registered in your virtual CD program and their properties.

Easy GUI: This is the default layout when you choose the “quick install” option for systems with fewer than 25 CDs.

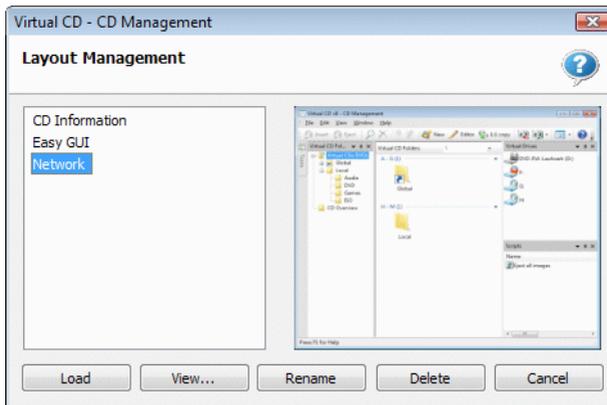
Network: This layout shows folders and scripts to provide access to all virtual CDs, whether assigned to the **Local** or **Global** view.

When you run CD Management, the most recently used layout is active. To restore the layout that was active the first time you ran CD Management, select the **Window / Layout / Reset** menu command.



CD Management requires a certain amount of time to load the information that is displayed in your administration windows. You can reduce the time it takes to load CD Management by using a layout that opens only those administration window(s) that you need.

Select **Window / Layout / Manage** to manage your layouts.



The list shows existing layouts. The image stored when you saved the layout is shown in miniature. Click **View...** to view a larger version of this image. You can also delete, rename and load layouts here.



Layouts for CD Management are stored in the language that is active at the time they are made. If you need a particular layout to be available in different languages, you have to store a separate version for each language.

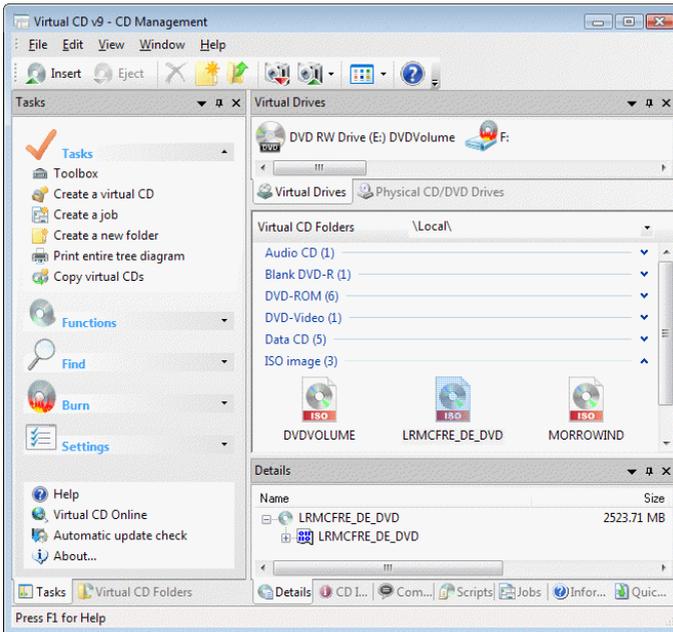
Grouping CDs for Easier Management

With Windows XP and later versions, files can be grouped in the Explorer view. As soon as this function became available Virtual CD added its own support for it, so now you can group your virtual CD for easier at-a-glance management. To group your virtual CDs in the CD Management window, select **View / Group by... / < grouping criterion>**. You can choose from the following criteria to group your virtual CDs:

Virtual CD (description): The virtual CD's description

Date: Date the virtual CD was created

CD type: Type of CD (e.g., audio CD)



In addition to options for the CD Management display, you can also group CDs in the display of search results when using the CD Search tool.



A number of grouping functions (such as closing a group list, selecting all elements in a group by selecting the group name, and others) have only been available since the advent of Windows Vista.

Using Scripts – No Programming Required!

The Script Generator makes scripts that execute the following commands:

- Insert virtual CD(s) and/or ISO image(s)
- Eject virtual CD(s) and/or ISO image(s)

Scripts that insert virtual CDs are especially useful for applications that use more than one virtual CD. The only limiting factor is the number of virtual drives available for the required virtual CDs.

The Script Generator creates a Visual Basic script (*.vbs). The virtual CDs designated in a VBS file are inserted or ejected over the Virtual CD application programming interface (API). Select the **Scripts** administration window in CD Management to view a list of existing script files. Double-click on a script file to run the script, or right-click on to edit it.



If you plan to use a script frequently, we recommend selecting the **Create a shortcut on the desktop option**. Then you can execute the script by double-clicking on the shortcut.



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Scripts can be very handy, and no programming skills are required to make a Virtual CD script. The following example demonstrates how to make and use a script that **inserts virtual CDs**.

1

Open CD Management and select the virtual CDs you want to have inserted by the script. Select **Generate** script from the **Functions** section of the sidebar to open the Script Generator.

Virtual CD - Script Generator

Generate a script to insert or eject multiple virtual CDs
Just add the virtual CD(s) of your choice and click on 'Generate' to create a script

Type of script to be generated

Script type : **Insert virtual CDs**

List of all virtual CDs to be processed by this script

Virtual CD	Virtual drive	Autoplay	Comment
Financial Times 2002 (Rt02_3)	Default drive	Yes	No
Wikipedia 2005	Default drive	Yes	No

Eject all virtual CDs
 Register unregistered virtual CDs
 Prompt user for confirmation before executing
 Stop if API error occurs

Program and working directory (optional)

Program :

Path :

Open the program in : **normal window**

After program has closed : **any inserted virtual CDs remain in their drives**

Test and shortcut on the desktop

Create a shortcut on the desktop



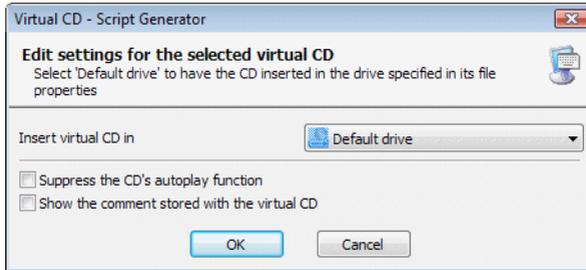
When you open the Script Generator from the CD Management program, the selected CD or CDs are automatically listed in the Script Generator program window for inclusion in the script. If you selected a folder in CD Management, all CDs in that folder are added to the list.



An easy way to write a script that inserts certain virtual CDs is to insert those virtual CDs yourself, run the Script Generator (for example, by selecting it in the Toolbox) and select **Snapshot**. The script generator opens with a new script window that includes all of the virtual CDs currently in drives. Now you can adapt the script as desired.

2

By double-clicking on a virtual CD, you can open a dialog showing virtual CD properties that you can edit; the changes you define here are implemented when the script runs.



You can make the following changes if desired:

- Specify a drive for inserting the virtual CD
- Specify whether Virtual CD should attempt to suppress the autoplay function
- Specify whether the comment for the virtual CD is displayed

For each virtual CD for which this option is activated, the **Image Properties** dialog is opened at the **Comment** page when the virtual CD is inserted.



The comment for a virtual CD can contain information that is important for running the program, such as the program serial number for an installation program. This is a handy way to make sure this information is available when the CD is inserted.



The only property you can edit in a script that ejects virtual CDs is the drive.

3

You can configure a number of options in the Script Generator program window. For example, you can select **Eject all virtual CDs**, or specify a program to run automatically once the CDs have been inserted or ejected. If your script inserts CDs, you can specify whether the script waits until the program it runs is closed, and if so, choose from the following options to define what happens after that:

- **All virtual CDs remain in their drives:** No virtual CDs are ejected when the program closes.
- **All inserted virtual CDs are ejected:** All virtual CDs that were inserted by the script are ejected after the program closes.
- **All virtual CDs are ejected:** After the program is closed, all virtual CDs are ejected from all drives.

In this example, we will simply have our virtual CD inserted. All other fields retain their default values.



Before generating a script, you can test whether it works and make sure it performs as expected by clicking on **Test**. This generates a temporary script in accordance with the settings active in the Script Generator, and executes it.

Click on **Generate** to write the script. This opens the standard **Save as...** dialog for entering a file name. We recommend choosing a **descriptive name**; one that will let you know what the script does even long after it was written.



The default path for saving the script is the Virtual CD script folder. If you select a different path, your script will **not** be displayed in your Virtual CD program windows, as the Virtual CD programs show only the scripts that are stored in the folder specified for that purpose in the Virtual CD Settings.

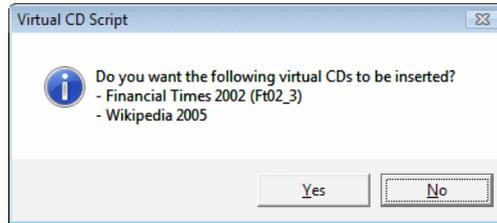
4

The new script is added to the **Scripts** administration window in CD Management. Double-click on it in that window to run it.

Scripts				
Name	Size	Type	Modified	
Eject all images.vbs	4 KB	VBScript Script File	2/5/2007 5:14:08 ...	
Magazines April 2007.vbs	15 KB	VBScript Script File	5/8/2007 10:44:54 ...	

Details
 CD Info
 Comment
 Scripts
 Jobs
 Information/...

If you left the **Prompt user for confirmation before executing** option active (default setting) when making the script, a window opens at this point telling you what the script will do and prompting you to either confirm or cancel the operation.

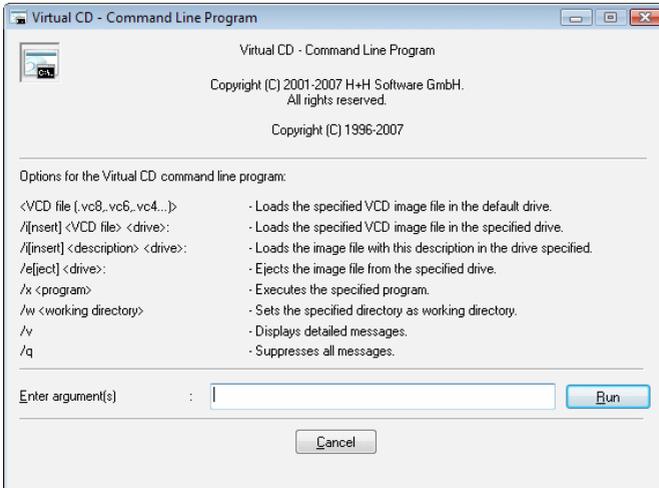


If you want to make use of Virtual CD scripts, we recommend experimenting with the various settings in the Script Generator to get an idea of the possibilities offered.

If you are familiar with scripts and want write your own, with other functions than those available in the Script Generator program, open **Start -> All Programs -> Virtual CD v9** and select **API documentation**. This file contains detailed descriptions of all the functions available over the Virtual CD API.

Command Line Program

Virtual CD comes with a command line program, **vc9cmd.exe**, stored in the Virtual CD system directory. You can use this program to insert or eject virtual CDs directly from the command line. When you use the functions in CD Management to create a desktop shortcut, the command line program inserts the virtual CD when the shortcut is activated. If you start the program without command line arguments, a window opens showing the command line options:



If an autostart program is defined in the properties of a given virtual CD, that program runs automatically when the CD in question is inserted by the command line program. If you define an autostart program by entering a program call as a command line argument, this overwrites any previously defined autostart program, and only the program designated on the command line is opened.

How the Virtual Burner Works

Virtual Burners

Virtual CD v9 supports virtual CD burners, which perform just like physical CD recording drive. A virtual burner can be addressed by any program that writes data on CDs or DVDs, in the same manner that they address physical burners. The icon shown for a virtual CD burner differs from the icons for normal virtual CD drives.



Virtual burners are set up during installation of the Virtual CD program. With the “quick install” option, the first virtual drive is set up as the virtual burner. In the advanced installation mode, you can determine which virtual drive (or drives) will be set up as burners. To add or remove a virtual CD burner, open the Emulation Settings.



Although virtual CD burners have advanced capabilities, they can still be used just like any other virtual CD drive.



Virtual CD supports use of the maximum number of drive letters as virtual CD burners. Keep in mind that some applications might not work properly when a large number of burners are available. For this reason, we recommend configuring no more than 2 drives as virtual CD burners.

Comparison of Virtual and Physical CD Burners

Although computer systems do not detect any difference between a virtual and a physical CD burner, there are a few points in which the use of a virtual CD burner differs from that of its physical counterpart:

The virtual CD burner is available to all programs on all computers on which the Virtual CD program is installed. This means you can burn a virtual CD or DVD on a computer that is not equipped with a physical CD recorder, and then burn the result onto a physical medium when a physical burner is available.

You can use the virtual CD burner to compose CDs (such as audio CDs, photo albums, videos, etc.) and test the results. This way, the 1-to-1 copy is created only when you decide that the composition is correct.

With the virtual CD burner, even programs that can only burn CDs directly can now produce test versions without using up blank physical CDs.

The virtual CD burner can write encrypted data on a blank virtual CD, so that the data cannot be accessed on the virtual CD without the password. Thus the data is protected as long as it is stored on the virtual CD. When it is copied to a physical CD, however, the encryption has to be undone; otherwise the physical medium cannot be used. On the other hand, if you burn it on a Smart Virtual CD, it can retain the encryption.

The physical burner creates the final version of the medium. Thus a physical burner is required on only one the device; e.g., your notebook at home.

One of the top priorities in developing the virtual CD burner was to ensure a high degree of compatibility with as many programs as possible. Although we have conducted extensive testing to this end, we cannot guarantee that all programs

can use the virtual burner to make CDs. This applies in particular with regard to highly specialized CD writing programs, since it is not possible for the virtual CD burner to reproduce all existing commands that a physical burner can use when writing data. If you have a problem with the virtual burner, please submit a request for support and let us know what program you are using and what actions you have taken, so we can try to reproduce and then eliminate the problem.



In some cases, you can use the file system to copy certain data in particular directory and then burn the directory. It is important to keep in mind, however, that a directory does not have the same capabilities as a CD or DVD, particularly with regard to autoplay features, write-protection, file structures, and so on. A virtual CD, by contrast, can be burned onto a physical medium and will run like any CD.



Do not use the virtual CD burner to create a 1:1 copy of a physical medium. Although it is possible, the result is still a virtual CD. We strongly recommend using the Image Wizard to create a virtual copy of a physical CD. The Image Wizard is specifically designed for making virtual CDs from physical media, and has a large number of configuration options that make it far more efficient for this purpose than the virtual CD burner.

Blank Virtual Media

To use the virtual CD burner with an application that writes CDs, you have to insert a blank CD, just like you would in a physical CD burner. This is why we have developed the **virtual blank**, which is a special type of virtual CD. Strictly speaking it is a virtual CD that does not contain any data, and which can only be used in the virtual CD burner. Virtual CD distinguishes the following types of virtual blank (the number in parentheses indicates the default capacity):

DVD-R (4.7 GB)

DVD+R (4.7 GB)

DVD+R DL (8.5 GB)

DVD-RAM (4.7 GB)

CD-R (600, 650, or 700 MB)

DVD-R and DVD+R are both supported because some older programs can handle only one of the two types. The dual-layer versions, on the other hand, were developed fairly recently, and all programs that support DVD-R DL will also support DVD+R DL.

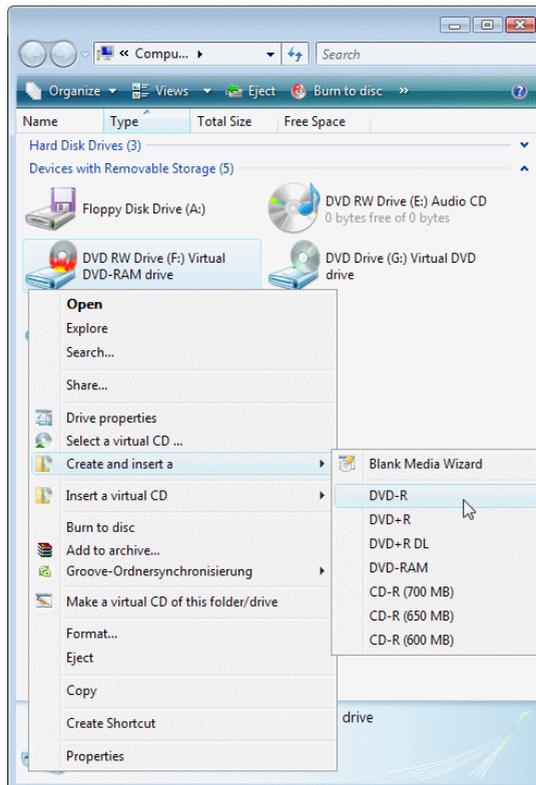
All virtual blanks except the DVD-RAM can optionally be created as ISO images. Once you have “burned” the resulting image, it can be used with any program that can process ISO images.



There are two reasons that RW media are not supported in Virtual CD. First of all, a new blank can be created at any time, with no waste of physical materials. Thus the supply is basically unlimited. Second, DVD-RAM is a far more flexible medium than any RW blank.

Creating Blank Virtual Media

To create a new virtual blank, you can use the **Create and insert** command (shown below in the **My Computer** shortcut menu) or run the Blank Media Wizard. With the **Create and insert** command, the virtual blank is automatically named after the type of medium created, and inserted in the virtual CD burner. Blank media is written in the path specified for new virtual CDs. If a virtual CD with the same name already exists on that path, a sequential number is appended to the name (e.g., “DVD-R1.vc8” for a DVD-R).



In addition to the **My Computer** shortcut menu, you can find the **Create and insert** command in the Explorer Extension, the CD Management program, the Toolbox, the Virtual CD sidebar and the Quick Start utility.

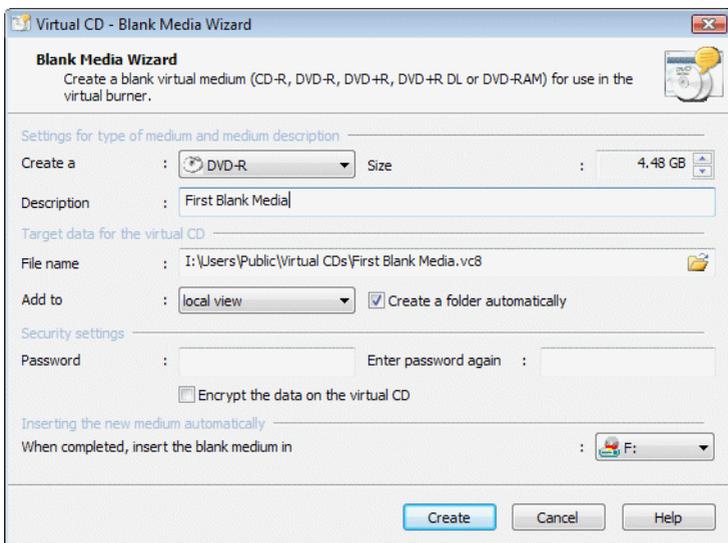


Virtual blanks created and inserted with one command have the default capacity.



Keep in mind when you use the **Create and insert** command that the result is a virtual CD, which takes up a certain amount of hard disk space. Don't forget to delete "failed" virtual CDs at regular intervals.

If you want to have more control over the process when creating a virtual blank, run the Blank Media Wizard.



With the Blank Media Wizard you can configure all parameters for the medium to be created. Under **Settings for type of medium and medium description** you can define the following:

Create a: Defines the type of virtual blank.

Size: Specifies the capacity of the virtual blank. The size of a virtual blank can be between 64 MB and 17.5 GB.



You can specify a non-standard size if desired, but keep in mind that the resulting virtual CD cannot be used to write a 1-to-1 copy on a physical medium.



Keep in mind that not all programs can handle blank media that have a data capacity above or below a standard size.



The size CD-R blank virtual media limited to 600, 650 or 700 MB; other values cannot be selected.

Description: This is the description shown for the medium in all Virtual CD programs. If you already know what you wish to write on this blank, you can enter a meaningful description here.

The **Target data for the virtual CD** defines where the blank virtual media will be stored. The path shown when this dialog opens is the **default path for new virtual CDs** as defined in the Virtual CD Settings. You can select a different path if desired.



The path and file name together must not exceed 254 characters in length.

The dropdown list box next to **Add to** lets you define where the virtual CD will appear in user interfaces (default setting: **Local view**):

Local view: The virtual CD is only visible on the computer you are now using.

Global view: The virtual CD is visible on all computers that use the same global configuration path.

Neither view: The virtual CD is not shown in any of the Virtual CD programs.



Options that are not available are not displayed here.

Select the **Create a folder automatically** option if you want Virtual CD to create a separate folder for the container files that make up your virtual CD. Because multiple files are written for a single virtual blank, it might be a good idea to leave this option activated.

You can assign a **password** if desired, to prevent unauthorized use of a given virtual CD. Once a password has been assigned, it must be entered before the virtual CD can be inserted or ejected, or its properties edited. The password has to be entered twice to define it.

The password merely protects the CD from unauthorized access. To encrypt the data that is on the CD, activate the **Encrypt the data on the virtual CD** option. In this case, the data is encoded using AES 256 encryption.



We recommend using a password that is not too easy to guess. The most secure passwords have at least 8 characters and include numbers, letters and special characters. The password is case sensitive (capitals are distinguished from lower-case letters) and can have up to 15 characters.



It might be a good idea to keep a copy of your password in a safe place. Without the password, there is no way to access the data on the virtual CD.



You can change or deactivate the password later in the properties dialog for the virtual CD (in the CD Management program), but only if the data on the virtual CD is not **encrypted**. If the data is encrypted, **the password cannot be changed**.

Select **When completed, insert the blank medium in <drive>** to have the virtual blank inserted in the selected virtual burner directly after it is created.

Once all parameters have been defined, click on **Create** to create the blank medium.



No matter which method you chose for creating the blank medium, a message is shown at the end of the process to let you know where it is stored.



The description and name of the virtual CD can be edited later. If no password or encryption is required, using a combined “create and insert” command is the quickest way to create and insert a virtual blank.

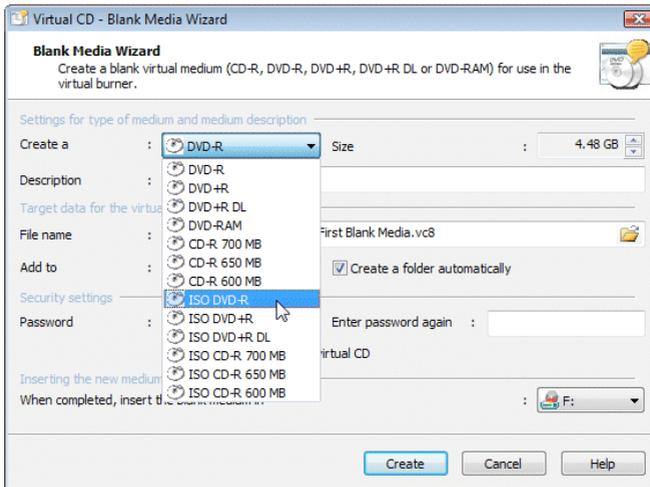
You can begin the burn process as soon as the virtual blank is inserted in the virtual CD burner.



Unlike normal virtual CDs, which can be inserted and read as often as you like, virtual blanks cannot be burned on all workstations. Please keep this in mind when you store a virtual blank on the network.

Blank ISO Media

In addition to normal blanks, the Blank Media Wizard can also create blank media as ISO images. This is particularly useful if you want to process the data on the virtual media with an ISO-capable program other than Virtual CD.



To create a virtual blank that can be used later as an ISO image, select one of the **ISO** entries from the **Create a...** list.



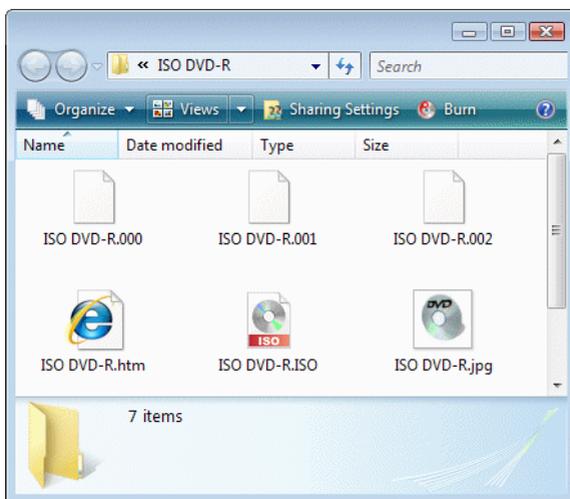
You cannot create a DVD-RAM as an ISO image.

Once you create a virtual blank ISO image, it is displayed in your CD Management program like any virtual blank.



It is a good idea to give the virtual blank ISO image a name that indicates its ISO formatting so you can tell, even after burning data on the blank, that it is an ISO image.

To access the blank ISO image, right-click on it and select **Open data storage location** from the shortcut menu.



You can access the ISO image in your Explorer **after you burn data onto the image**. The other files are required by Virtual CD for management purposes.

The advantage of ISO images is their compatibility with other programs. Disadvantages include the following:

Possible incompatibility of data: An ISO image is a data CD with a data track. It is possible to burn audio tracks onto the virtual blank image, but if you do so, it can no longer be used as an ISO image. Because Virtual CD cannot detect the data being written during the burn process, no warning is given when you add audio tracks to an ISO image.

Limited functionality: Not all of the functions available for virtual CDs can be applied to virtual ISO images.

Potential difficulties burning data onto the blank: Virtual CDs consist of several files, which ensures that they are always stored correctly regardless of the file system used. ISO images can only consist of one file. For this reason, you should create virtual blank ISO media only on hard drives that use the **NTFS** file system. While blank ISO media can be created on other systems, an error could occur during the burn process if the maximum permissible file size is exceeded.



Because there are so many factors to be considered when creating virtual blank media as ISO images, they can only be created using the Blank Media Wizard.

Detection of a Virtual Blank

Once a virtual blank has been created, it is displayed like any other virtual CD in the programs you use for managing virtual CDs. Unlike a normal virtual CD, however, the virtual blank can be used only with the virtual CD burner. Once it has been burned, it can be inserted in any virtual drive. To make it easier to tell an **unused** blank from one that has been burned, “**(blank)**” is displayed with the name of an unused blank.

```
(--) - Borneo
(G:) - Constantine
(F:) - DVD-R- (blank medium)
(E:) - FEAR
(G:) - Financial Times 2002 (Ft02_3)
```

This example shows the Quick Start utility menu with a **DVD-R - (blank)** and an **ISO DVD-R - (blank)**, both of which are unused virtual blanks; the other entries are virtual CDs that have already been burned.



An exception to this rule is the DVD-RAM; this type always shows the “blank” designation, because it can be rewritten at any time.

After you have burned data onto a virtual blank, Virtual CD sets the CD type according to the data written; for example, if you burn audio tracks onto the CD, the CD is displayed as an audio CD in the Virtual CD Management program.

The Windows CD Recording Function



The procedure described in the following applies to a system that uses only the CD-writing feature that comes with Windows versions XP and later. If you use a different program for burning CDs, please refer to the manual supplied with that program for details.

In this example, we will burn a data CD and an audio CD to show how it can be done in just a few easy steps using only Windows software. These two examples show that there is basically no difference between a virtual and a physical burner – except that, if anything goes wrong or the CD doesn’t come out the way you want it, no blank CD is wasted when you use a virtual burner.

When using Windows **XP**, the operating system’s own CD recording function must be activated for the virtual drive for the following procedures. This feature may have been deactivated for any of a number of reasons; for example, if another CD burning program is installed on the computer. To make sure this function is active, right-click on the virtual burner in the Windows Explorer and select **Properties**.

Open the **Recording** page for the virtual burner and make sure the **Enable CD recording on this drive** option is active.



This step is unnecessary if you use Windows **Vista**, since the operating system's CD-recording function is active by default.



Aside from the step described above for activating the CD-recording function in XP, there are no differences between Windows XP and Windows Vista up to this point. On the other hand, support for CD-recording functions has been significantly expanded in Windows Vista and differs from Windows XP in the following aspects:

Virtual blanks: The Windows **XP** CD recording function only works with blank **CDs**, and not with blank DVDs. Windows **Vista**, however, can use both. This is why the examples described below will not work if you use a DVD blank with Windows XP.

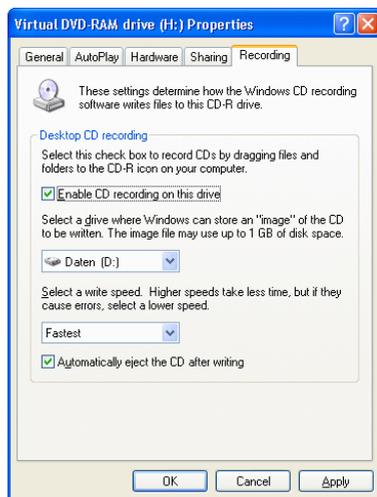
Using a DVD-RAM: If you want to use a blank virtual **DVD-RAM** with Windows **XP**, you have to **deactivate** the **Enable CD recording on this drive** setting. While Windows XP does support DVD-RAMs as a rewriteable medium, this support and the use of the CD-recording function are mutually exclusive. This applies regardless of whether you are using a virtual or a physical CD burner. Windows **Vista** can handle **DVD-RAM** media without any modifications in configuration settings.



For general information on Windows CD recording functions and related issues, please read the documentation on your operating system.



Because the procedures for burning virtual data CDs in Windows XP and in Windows Vista are not identical, examples of both procedures are provided in the next section. The procedure for burning an audio CD, however, is the same in both systems; thus only one example is provided.

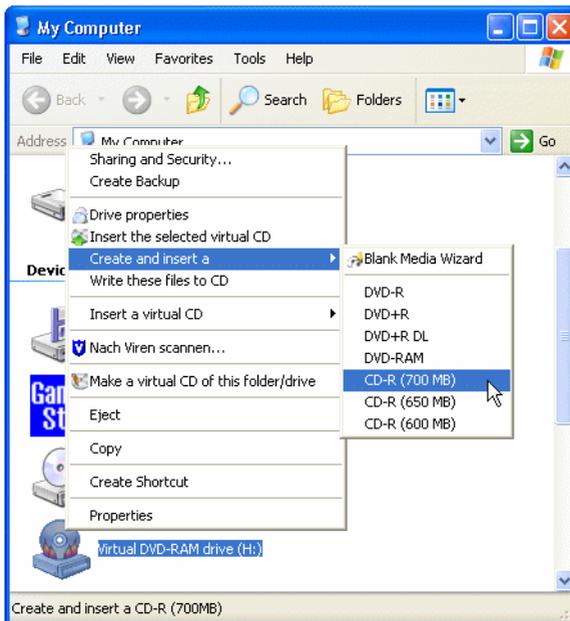


Burning a Virtual Data CD in Windows XP

The following describes how to burn a data CD in just a few easy steps, using the CD-recording function integrated in the Windows XP Explorer.

1

Use the **Create and insert...** command that Virtual CD integrates in Windows to create a blank virtual **CD-R** and have it automatically inserted in the virtual CD burner.



Once the virtual blank has been created, a window opens informing you of the fact. Click **OK** to close the message window.

2

After the blank is inserted in the virtual CD burner, the Windows autoplay function opens the a dialog for a **blank CD**. Select **Open writeable CD folder using Windows Explorer**.

This opens another Explorer window, with the virtual CD burner as address. You can use drag and drop to add your choice of files here.



3

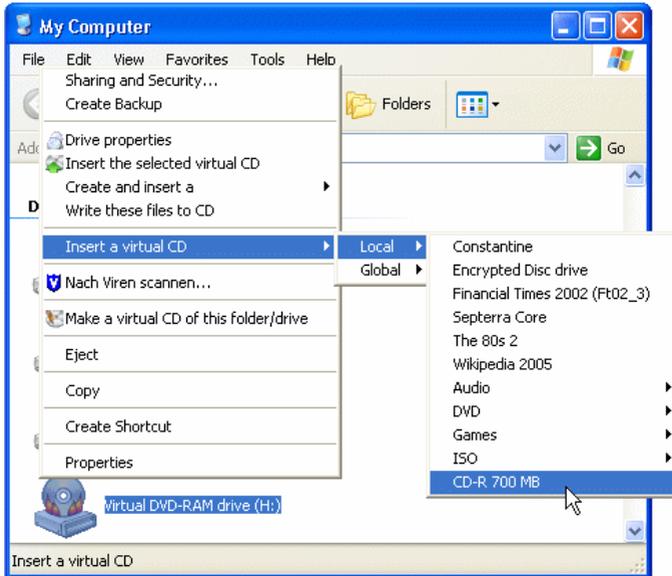
Once you have added the data you wish to burn, select **Write these files to CD** to open the **CD Writing Wizard**.



Follow the instructions given in the Wizard and click on **Finish** to complete the process.

4

If Windows ejects the CD after burning, you need to insert it again to test it.



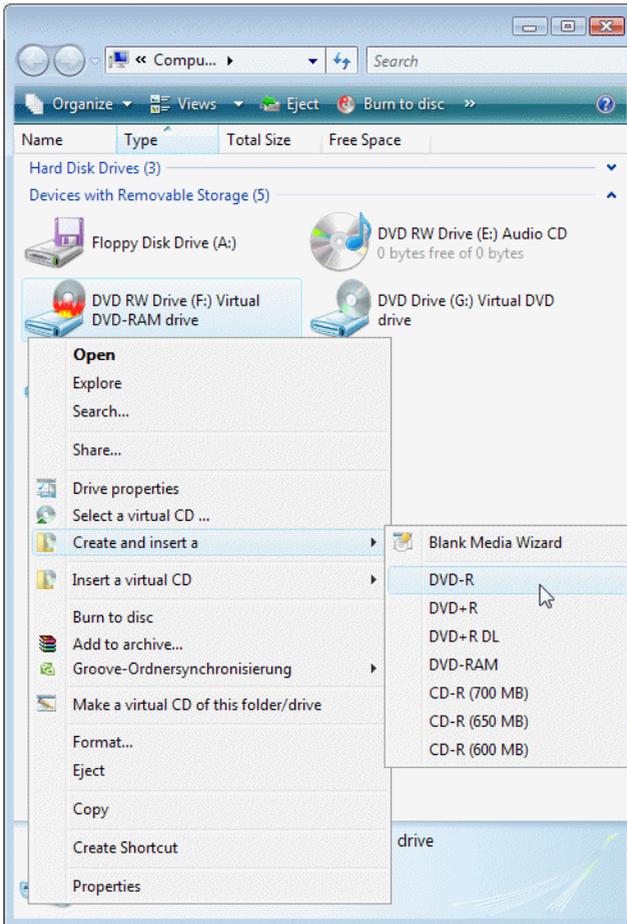
If the CD runs as intended and contains the desired data, you can burn a 1:1 copy on a physical CD. Otherwise, you can make a new virtual blank and try again.

Burning a Virtual Data CD in Windows Vista

The following describes how to burn a data CD in just a few easy steps, using the CD-recording function integrated in the Windows Vista Explorer.



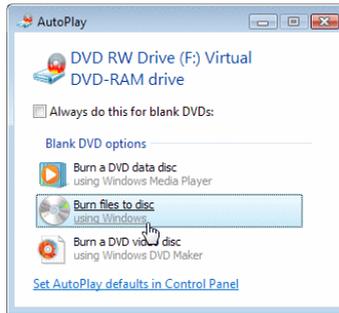
Use the **Create and insert...** command that Virtual CD integrates in Windows to create a blank virtual **DVD-R** and have it automatically inserted in the virtual CD burner.



Once the virtual blank has been created, a window opens informing you of the fact. Click **OK** to close the message window.

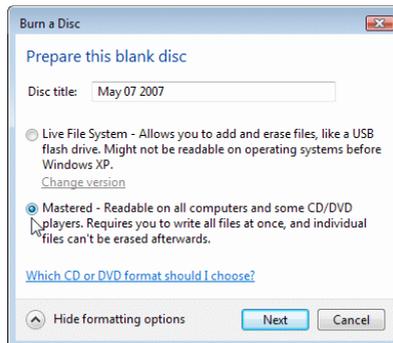
2

After the blank is inserted in the virtual CD burner, the Windows autoplay function opens the a dialog for a **blank DVD**. Select **Burn files to disc**.



3

This opens the **Prepare this blank disc** dialog; this is where you can select the file system to be used.



The default setting is "Live File System;" to change this, click on **Show formatting options**. Select **Mastered** for this example and then click **Next** to continue.



The "Live File System" has certain disadvantages which will be addressed further below.

Now another Explorer window opens, with the virtual CD burner as address. You can use drag-and-drop to add your choice of files here.

4

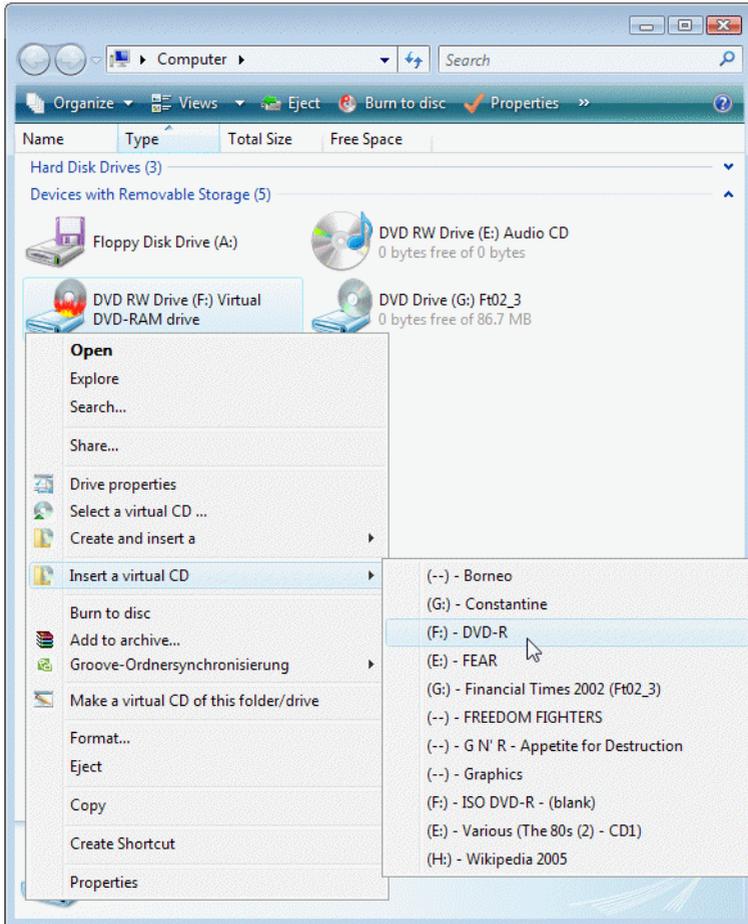
Once you have added all the files you wish to burn onto the medium, click **Burn to disc** to start burning.



Follow the instructions given in the Wizard and click on **Finish** to complete the process.

5

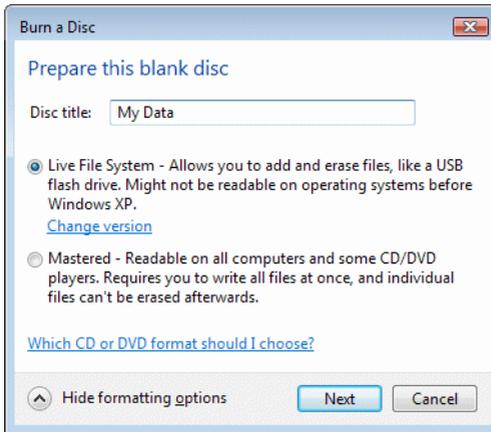
If Windows ejects the DVD after burning, you need to insert it again to test it.



If the DVD runs as intended and contains the desired data, you can burn a 1-to-1 copy on a physical medium. Otherwise, you can make a new virtual blank and try again.

Windows Vista Live File System

When you burn data onto a CD in Windows Vista, the first step is to select the file system to be used on the CD.



Windows Vista offers the following file systems for use when burning data onto a CD:

Live file system: Records the data in UDF format and enables later modification of CD content. With a simple re-recordable CD, new data is added at the end of existing data and the table of contents is updated. Thus the amount of space available on the CD is reduced with each addition of data, and data can be written until no more space is available.

Mastered: The conventional technique for writing on CDs. With this method, data once written cannot be modified.



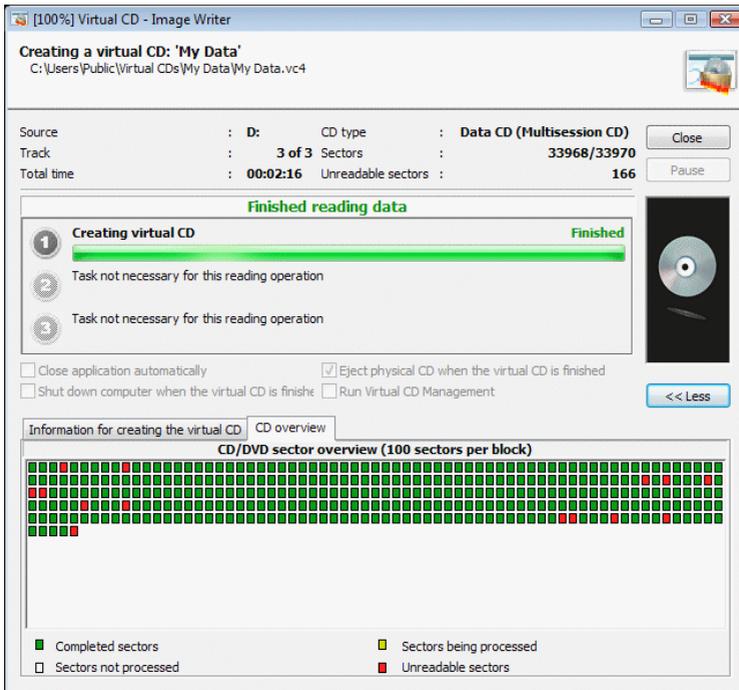
The live file system is the default setting for burning data on CDs in the Windows Vista operating system. If you do not want to use this system, you have to select the **Mastered** setting before you begin burning data on a CD.

At first glance the live file system may seem to be the better choice for writing data on CDs, but it does have some disadvantages, particularly with regard to with virtual CDs:

Compatibility problems: Media burned with the live file system cannot be read by all systems; this means other people might not be able to use the CDs you burn with this file system. Every time a live-file-system CD is ejected, a new session is created; thus every live-file-system CD is a multisession CD that has to be closed after each use.

Problems with unreadable sectors: The live file system adds unreadable sectors when writing data on the CD. This makes it more difficult and time-consuming to create a virtual CD or a 1-to-1 copy of the resulting CD.

When you make a virtual CD from a live-file-system CD, the unreadable sectors are shown.



Unreadable sectors on the CD affect only the copying process or the process for making a virtual CD; they do not affect the functioning of the CD.

The virtual burner in Virtual CD supports burning data with the live file system but the CD is closed after the first session; in other words, after it is ejected for the first time. The virtual CD can be inserted again and used immediately, but no further data can be added.

The virtual burner does not support creation of multiple sessions on the virtual CD. The session is closed automatically; there is no need to close it “manually,” as is the case with physical CDs.

Because the resulting CD can be re-written, the live file system definitely has advantages; for example, in data archiving. If you wish to share your burned CDs

with other people, or make virtual CDs and burn them onto physical CDs at some later point, the conventional file system is preferable to the live file system.



This section of the manual has presented only certain aspects of the live file system in connection with Virtual CD. For more information on the live file system and its uses, please refer to your operating system documentation.

Burning a Virtual Audio CD

As described for burning a data CD, you can also create an audio CD using standard Windows tools.



Windows Media Player v11 is used in the following example, but you can use earlier versions of the Media Player for the same purpose.

1

Begin by using the **Create and insert...** command that Virtual CD integrates in Windows **to create a blank virtual CD-R** and have it automatically inserted in the virtual CD burner. Click on **OK** to close the message window once the virtual blank has been created.

2

After the blank is inserted in the virtual CD burner, the Windows autoplay function opens the a dialog for a **blank CD**. Select **Burn an audio disc**.

This opens the Windows Media Player; the program is opened at the **Burn** page. Add the songs you wish to burn onto the CD.



If the virtual CD burner is not specified as the current drive, click on **Next drive** until the virtual burner is shown, with the virtual blank inserted.



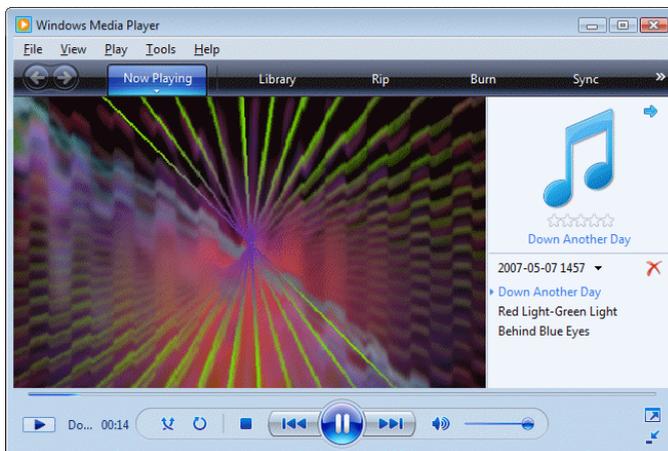
3

Once you have configured the required settings, click on **Start Burn** to begin the CD writing process.



4

Once the burn process has been completed successfully, insert the virtual CD to test the results.



Post-Processing

In each of the examples above, the virtual blank was created and inserted with a single command. This procedure lets you make a large number of virtual CDs in a short space of time, but all of them will have the same description (shown in Virtual CD programs). To help prevent confusion, it is a good idea to process virtual CDs as follows after burning them:

- Delete virtual CDs that you no longer need (e.g., CDs that failed testing)
- Edit the descriptions of virtual CDs you wish to keep. To do this, open the image properties and enter a description that gives an indication of the CD content.

The two illustrations below show the Quick Start menu with two burned virtual CDs listed, before and after the post-processing (editing) steps described above.

Before editing:

```
(--)- Borneo
(F:) - CD-R 700 MB
(G:) - Constantine
(--)- Data
```

After editing:

```
(H:) - My Data
(F:) - My first audio CD
(E:) - Various (The 80s (2) - CD1)
(H:) - Wikipedia 2005
```

Supported Formats

The above examples showing how to burn data and audio CDs demonstrate the two data formats that are currently supported by the virtual CD burner. **Special formats such as CD-Graphics, CD-Text and multisession CDs are not supported by this version of the virtual CD burner.** This should not generally present a problem, however, since these non-standard formats make up only a negligibly small proportion of the media used in writing CDs. Normal data and audio CDs are the only kind you need to burn in most cases.



The Windows Vista live file system is supported, with the restriction that the first time the live-file-system CD is ejected, the session is closed and no further processing of the data on the CD is possible.



If you have problems using the virtual CD burner, be sure to check whether the CD-writing software has any settings that are configured for a non-standard format. If this is the case, delete the virtual CD you just burned, change the settings in the software and start again with a new virtual blank.

Using a DVD-RAM

The examples above for burning virtual CDs used basic blank virtual media. Virtual CD can emulate a DVD burner, too, and supports blank virtual DVD-RAMs.

DVD-RAMs can be used as follows:

- For burning 1-to-1 copies. In this case, the DVD-RAM is handled like a normal blank DVD that can be written on once and after that is 'read-only.' Not all programs that can write DVDs can also write data on a DVD-RAM.
- As a re-writable medium (similar to a hard disk). In this case, the DVD-RAM can be written and read at any time.



For correct support of a re-writable DVD-RAM with Windows **XP** tools, the Windows CD-recording function must be deactivated.



Keep in mind that a virtual blank can only be opened for writing by one computer at a time. This applies to DVD-RAMs as well as other virtual media. It is not possible to open a single DVD-RAM as re-writable media on multiple computers.

To make a DVD-RAM re-writable, it must be inserted and formatted. To do this, use the 'format' command in the Explorer menu or the packet writer in a CD-writing program (such as "InCD" in Nero). Once the DVD-RAM has been formatted, it is a re-writable medium and cannot be used for creating 1-to-1 copies.

You can use the Virtual CD Eraser Wizard to delete data from a DVD-RAM, after which it can be used for either of the tasks described above. Keep in mind that you need to format the DVD-RAM again if you wish to use it as a re-writable medium.



Even if the DVD-RAM is re-writable, you can activate write-protection for it in the image properties. This makes the DVD-RAM a 'read-only' medium.

Creating a DVD-RAM

The procedure for creating a DVD-RAM is the same as that described under Creating Blank Virtual Media. When you make a virtual blank that can only be written on once, only the basic files are created. The data storage space is not used until a program writes data on the blank, using the virtual burner. It takes longer to create a re-writable DVD-RAM, because the entire specified capacity is used as soon as the virtual blank is created. This difference is due to the fact that any position on the DVD-RAM can be written in at any time, while writing data on a single-use blank always starts at the "beginning" and continues to the "end." How much time it takes to make the blank DVD-RAM depends on the selected size.



It takes a lot longer to make a DVD-RAM with a FAT32-formatted hard disk than it does with an NTFS formatted hard disk.



If you use the **Create and insert...** command to make a DVD-RAM, the blank will have a capacity of 4.7 GB.



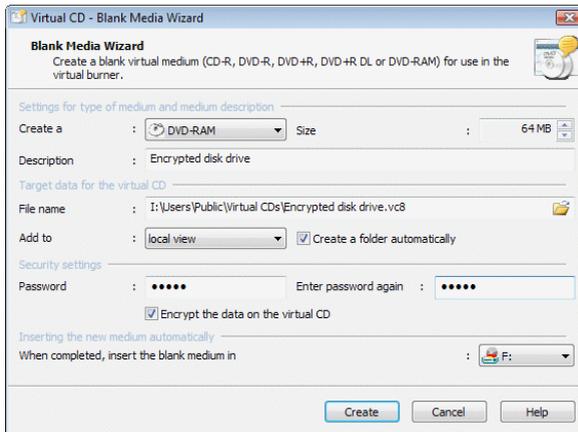
Using the Blank Media Wizard, you can create a DVD-RAM with as little as 64 MB disk space.

Using a DVD-RAM as an Encrypted Hard Disk

A virtual blank DVD-RAM can be used in the virtual burner as though it was an encrypted virtual hard disk.



To set up a virtual DVD-RAM for use as a virtual hard drive, **right-click** on the **Quick Start** icon and select the virtual CD burner. In the menu that opens, select the **Create and insert blank medium** command to run the Blank Media Wizard.

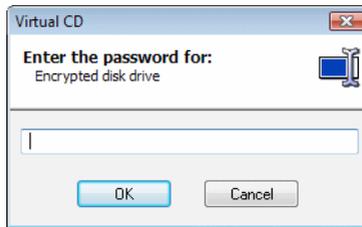


Select “DVD-RAM” as the medium type, specify the size – our example uses 64 MB, the smallest size available - and enter a description. Define a **password** to be used for the encryption, and activate the **Encrypt the data on the virtual CD** setting. Now you can select **Create** to create the DVD-RAM.



To create a DVD-RAM that is not encrypted, skip the password and “Encrypt the data...” settings and go directly to Step 2.

Once the DVD-RAM has been created, it is automatically inserted in the virtual burner. Because it is encrypted, you are prompted to enter a password as soon as the DVD-RAM is inserted.



The corresponding password must be entered every time an encrypted medium is inserted. Make sure the password cannot be irretrievably lost or forgotten, as the data on the encrypted medium cannot be accessed without it.



The next step is formatting the DVD-RAM, to make it re-writeable. When you create a DVD you are prompted to specify whether you want it to be formatted. If you confirm this prompt, the DVD-RAM is formatted automatically. To format the DVD-RAM later, open **My Computer**, **right-click** on the virtual burner and select **Format...** from the shortcut menu.

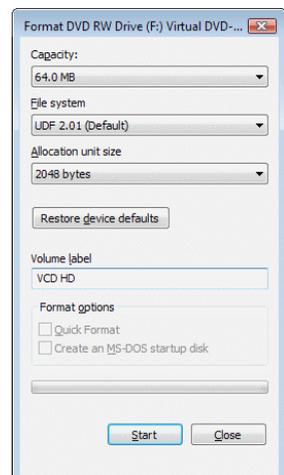
The main setting you can configure in the following dialog is the **volume name**. The designation you enter here is used in the Windows Explorer to identify this DVD-RAM.



Because the smallest size was selected for the DVD-RAM in this example, it cannot be formatted for FAT32. In Windows XP, select FAT as the file system. In Windows Vista, leave the default setting unchanged; in this case, the UDF system is used.

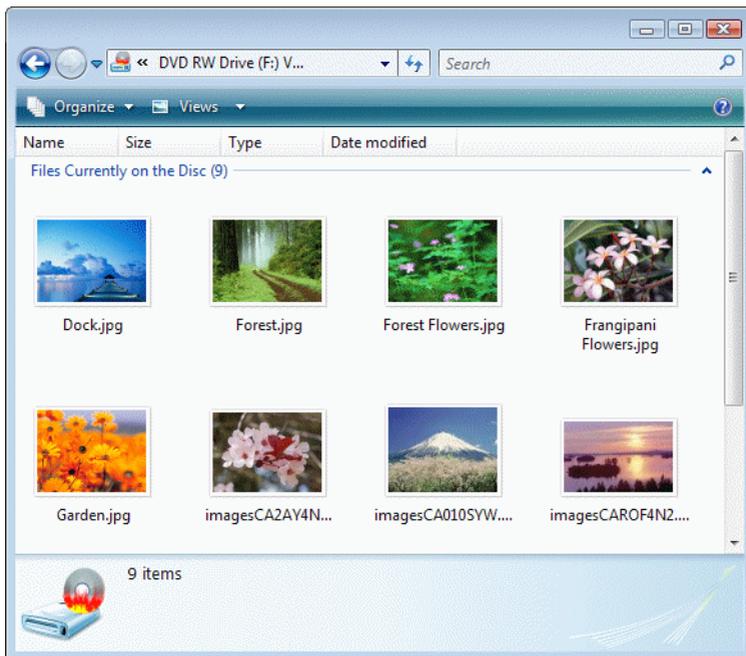


Make sure that you format the DVD-RAM, and not any other drive. Any data stored on a drive is irretrievably lost when that drive is formatted.



3

Once formatting has been completed, you can use the virtual burner to access the DVD-RAM like any hard disk.



Always eject the virtual CD when you leave the workstation. As long as it is in the drive, anyone can access the DVD-RAM in spite of its encryption.



Open CD Management and make a desktop shortcut to the DVD-RAM. This way, you can open this virtual CD any time by simply double-clicking on the shortcut.



Encrypted disk drive

General Procedures

As has been described in this manual, using the virtual CD burner is as easy as using a physical CD burner – which is not surprising, since the two are very similar.

The procedure for burning a virtual CD always includes the following steps:

1. Insert virtual blank: either automatically, with the **Create and insert...** command, or using the Blank Media Wizard.
2. Prepare the data and burn the CD.
3. Test the CD. In most cases, the CD will have been ejected automatically after burning, so it will have to be inserted again for testing.
4. Post-processing, if desired (e.g., renaming the CD, etc.).

These steps apply for both data and audio CDs, as well as DVD-RAMs. Only Step 4 is optional; it is, however, strongly recommended.



Remember that the virtual CD burning process cannot start if there is no virtual blank in the virtual burner.



To prevent confusion and conserve disk space, it is a good idea to delete virtual CDs that you do not need.

Data Search

Search Options

The more CDs you have, the more difficult it can be to find a particular CD, or a certain file on a CD, when you want it. To make it easier, Virtual CD offers you the following search options:

CD Search: Search for virtual CDs or ISO images in order to add them to your Virtual CD program, process them with other Virtual CD functions, or delete them.

Catalog Search: Search for specific content on virtual or physical CDs (without having to load the CDs in a drive!).

Both of these options can be accessed through any of the following:

- VCD Toolbox
- VCD Sidebar
- CD Management
- Quick Start utility

Integrating Existing Virtual CDs

If you have virtual CDs that are not shown in your Virtual CD Management program (“unknown” or “unregistered” virtual CDs), use the CD Search function to integrate them in your VCD system quickly and easily.

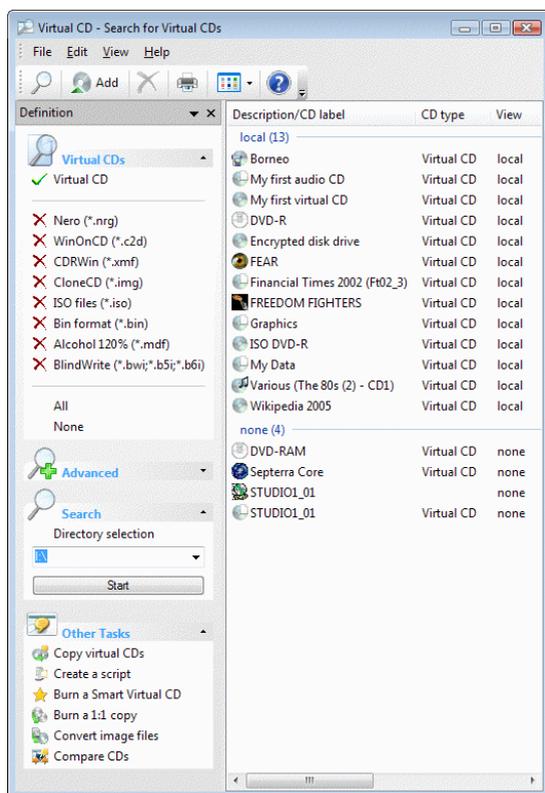
1

Select **Search for virtual CDs** in the sidebar of your CD Management program to start the search.

2

In the **Definition** sidebar of the CD Search tool, specify the type of virtual CDs to look for and the directory in which the search is started.

Once these parameters have been defined, click on **Start** to begin the search.



You can use the grouping function to group results for a better overview of the virtual CDs found.

3

After a brief pause, the CDs found are listed. Select the CDs you wish to integrate in your CD Management program and click on **Add**.



If you have not specified any CDs when you click on **Add**, all the virtual CDs in the list are added. You are prompted to confirm this command, however, in case **Add** was clicked unintentionally.

At the end of the process, the **Search** window indicates how many virtual CDs were added. When you confirm this message, the **Search** window closes and the newly integrated virtual CDs are ready to use.



If the CD Management program was not already running (e.g., if you used the Toolbox or Quick Start utility to start the search), it runs automatically when virtual CDs are added.

Functions in the CD Search Program

In some situations, you may want to carry out operations on virtual CDs without having to integrate them in the CD Management program. To give you direct access in such cases, a number of tasks have been integrated in the CD Search function:

Copy virtual CDs: Runs the Copy Wizard to copy the selected images to a different directory.

Create a script: Runs the Virtual CD Script Generator to create a script for the selected images.

Burn a Smart Virtual CD: Runs the Smart Virtual CD Burner to burn a Smart Virtual CD containing the selected image.

Burn a 1:1 copy: Runs the Virtual CD CD Burner to burn a physical copy of the selected image.

Convert image files: Runs the Image Converter to convert the selected image to a different format.

Compare media: Runs the Comparison Wizard for comparing virtual CDs to one another or to physical CDs.

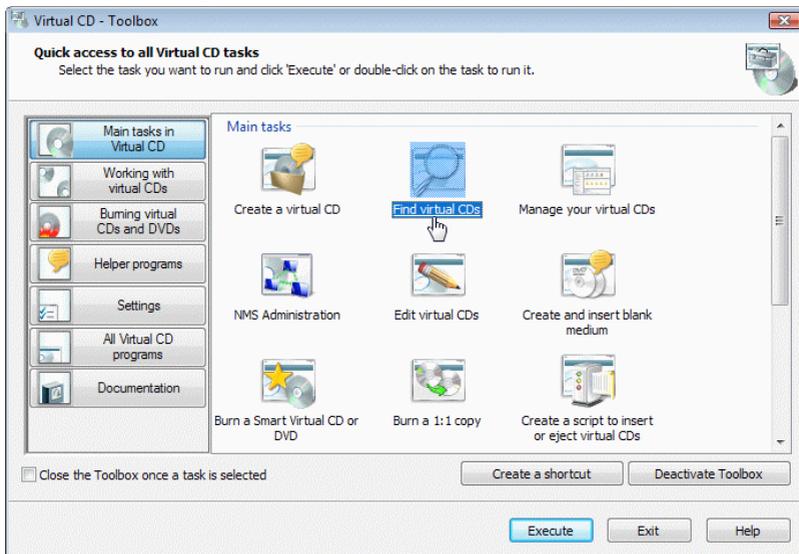


All of the programs that you call with the CD Search function are automatically opened with the selected image(s). The **Burner** and the **Image Converter** can process only one image. If multiple images are selected when one of these two programs is called, only the first image selected is passed to the program.

To illustrate the use of tasks in the CD Search function, the following example describes the procedure for copying a number of ISO images using the Copy Wizard.



Run the **Toolbox** by double-clicking on the **Virtual CD v9** icon and select **Find virtual CDs** to start the CD Search.

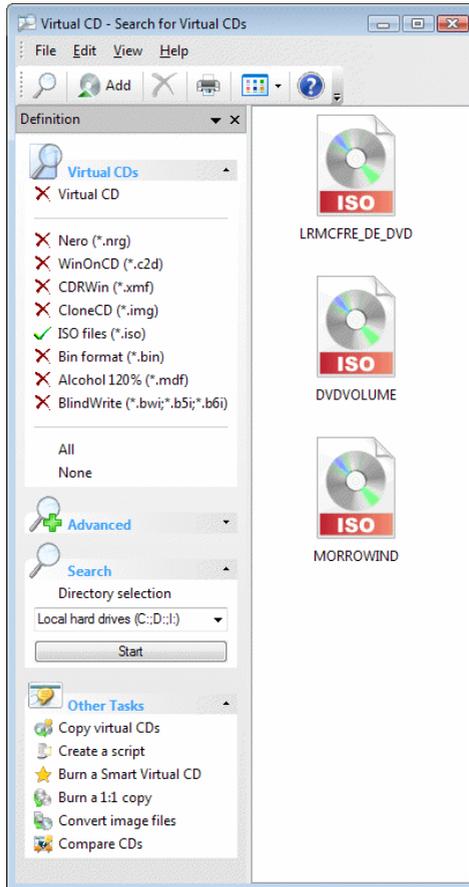


2

In the **Virtual CDs** section of the Definition sidebar, select **None** to clear all settings and then select **ISO files (*.iso)**. Under **Search**, specify the directory to be searched and then click on **Start** to begin the search.

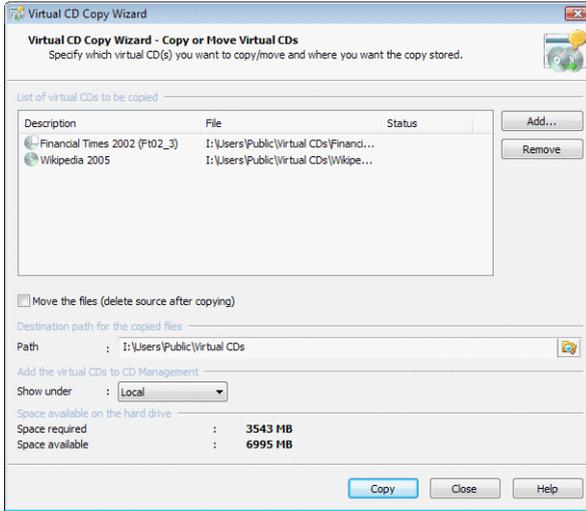


If you do not have any ISO images, choose a different file type for this demonstration.





In the list of images found, select one or more images to copy and click on **Copy virtual CDs** in the **Tasks** section.



The Copy Wizard opens and shows a **list of images to be copied**, containing the images that you selected in the CD Search.

All you need to do now is specify the **target path** and click **Copy** to begin the copying process.

Thus the CD Search function gives you quick and easy access to all of the images in your system, and lets you pass them automatically to the program module of your choice.

Find and Delete

In addition to other functions, the CD Search can be used to delete virtual CDs or ISO images from your hard disk. To do this, just mark the files you wish to delete in the search results, and then select the **Delete** command from the **Edit** menu.

The advantage of this function is that you can select a number of virtual CDs or image files regardless of whether they are registered in your CD Management program or not.



Unlike the Delete virtual CDs command in CD Management, the **Delete** command in CD Search does *not* remove CDs from CD Management, it only “de-registers” them. Afterwards, they are handled as **unknown CDs**. The **Delete** command in CD Search is best suited for deleting CDs that are not registered in Virtual CD.

Virtual CD Catalog Functions

Have you ever had to search for a file when you didn't know or couldn't remember which CD it was stored on? If so, you know it can take a long time – especially if you have a lot of CDs – regardless of whether you are using physical or virtual CDs.

To solve this problem, we have developed the Virtual CD catalog. This catalog is a compendium of all the catalog files you have created for your CDs. Each catalog file is associated with one specific CD and contains information about all of the files and folders on that CD. There are a number of ways to create catalog files:

- While you are making a virtual CD: On the **Virtual CD Properties** page, select the **Create a catalog for this virtual CD** option. A catalog file is created automatically at the same time the virtual CD is created.
- In the CD Management program: Select a virtual CD and then click on **Create catalog** in the **sidebar**.
- In the **Physical CD/DVD drives** administration window of the CD Management program: Select the drive containing the CD-ROM for which you wish to create a catalog and click on **Create catalog**.

The name of the catalog file is derived from the description, for a virtual CD, or from the label, for a physical CD.



Create only one catalog file for each CD; otherwise, when you search for a file, it may appear to be found more than once.



The catalog search detects additional information when a catalog is made (such as version details, for example) and stores this data in the catalog. If the catalog was made from a virtual CD, however, as opposed to a CD-ROM drive, this additional information is not detected.

The best way to familiarize yourself with the catalog search functions is to create a catalog yourself. To do this, run CD Management and insert a virtual CD in a virtual drive, and then right-click on the drive. Select **Create catalog** from the shortcut menu.

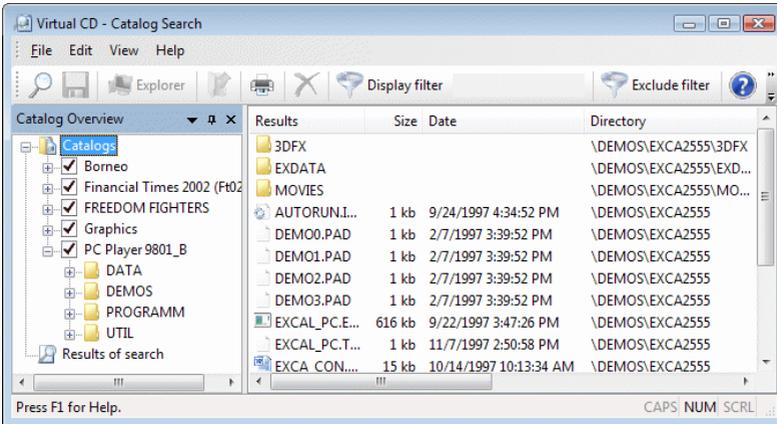
When you activate a catalog search, the following functions are available:

Display of catalogs: You can have a catalog of CD contents displayed so that it appears as through the CD itself were in a CD drive.

Search in catalogs: You can search through catalogs for specific files, to find out which CD has the data you are looking for.

Display of Catalogs

Run the **Catalog search** to display a catalog.



The **Catalog Search** window is divided into two panes: the **Catalog Overview** on the left shows a list of all catalogs, while the **Display View** on the right shows the contents of the catalog selected in the Overview. Select a catalog to have the contents displayed. The display functions are similar to those of the Windows Explorer.



The more data a catalog contains, the longer it takes to load the data for display. If the selected catalog has a particularly large data volume, you are prompted for confirmation before the data is loaded.

When you double-click on an item in the list, the Windows Explorer opens and shows the folder in which the file is stored. If the CD from which the catalog was made is not in a drive, the search function prompts you to insert it. If the catalog was made for a virtual CD, however, the CD is inserted automatically.

Searching in Catalogs

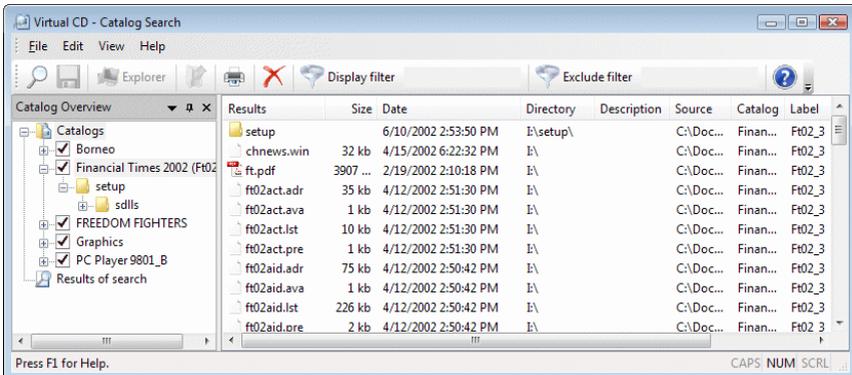
When you run a file search, the **Catalog Search** function searches in all selected catalogs. If the file is found, the display shows the CD on which the file is stored.

1

To run the search, click on **Catalog search** in the sidebar of your CD Management program.



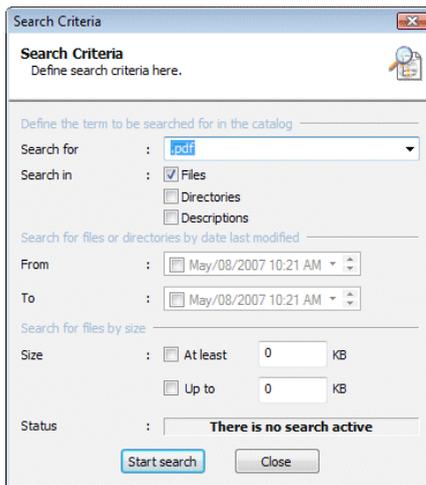
If you want to find the catalog to a particular virtual CD, just select the CD, right-click on it and select the **Catalog Search** command from the shortcut menu. In this case, the catalog that was made for the specified virtual CD is automatically selected for the catalog search.



2

In the **Catalog Overview**, select the catalogs to be included in your search. Then open the **Edit** menu and select **Search**.

Define your search arguments. In our example, we are searching for **.pdf** files. You can search for files, directories or CD descriptions. Every folder and every file has a **Description** field which you can use for entering a descriptive text. For some files, such as program files, an attempt is made to create a description when a catalog is made. Once the parameters have been defined, click on **Start search** to begin the search.



3

Any files found that meet the specified criteria are displayed at the conclusion of the search operation. To access a file in the search results, just double-click on it or select it and choose **Explorer**.



You will be prompted to insert the CD if it is not already in a CD drive, unless it is a virtual CD, in which case it is inserted automatically.



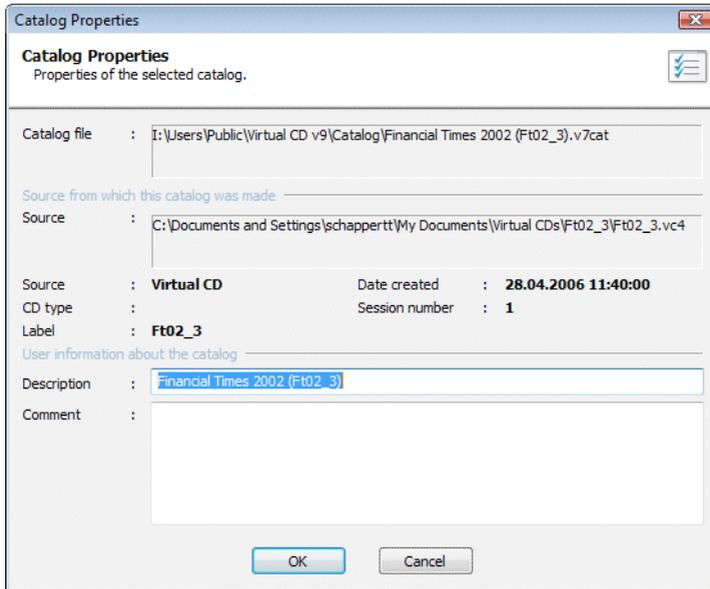
You can print the search results by choosing **Print** from the **File** menu or clicking on the **Print** icon in the toolbar.



Leave the **Search Criteria** dialog open if you wish to carry out other searches. When you exit the **Catalog Search**, this dialog is closed automatically.

Catalog Management

To view the existing catalogs in your system, open the **Catalog Overview** in the **Catalog Search** window. You can also edit and delete catalogs in the overview. You also have the option of entering a description and a comment for each catalog. If you want to edit these fields, right-click on the desired catalog and select **Properties**.



The **Properties** dialog shows detailed information on the selected catalog. The **Description** entered here is used as the name of the catalog when it is displayed in the Catalog Overview. The **Comment** is a user-definable text you can store with the catalog.

To delete a catalog, select it with the mouse and then choose the **Delete** command from the **Edit** menu.



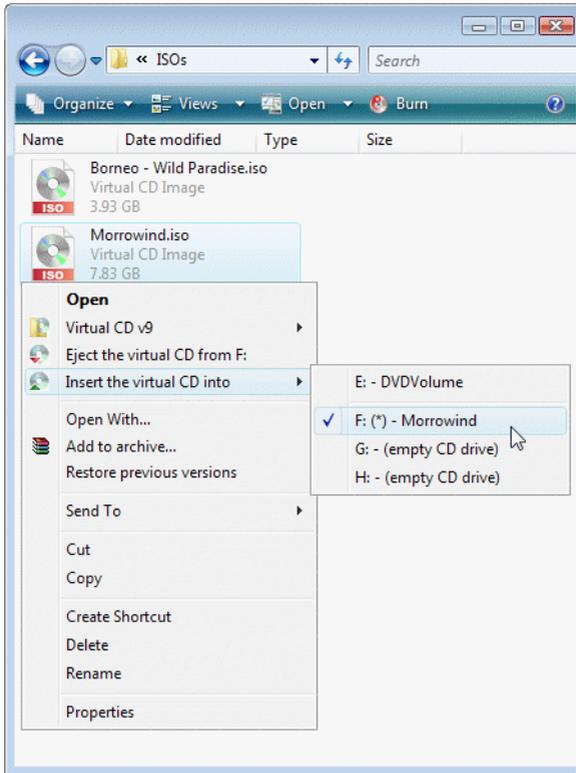
New catalogs can be created only in the CD Management program.

Non-Virtual CD File Formats

ISO Images and Other Formats

Virtual CD supports all images that use the ISO format. ISO images are created by a large number of programs (such as CD-writer software) and are often downloaded from the Internet.

To use an ISO image in Virtual CD, just right-click on it in the Windows Explorer; thanks to the VCD Explorer extension, the shortcut menu has a command for inserting the image in a virtual CD drive.



When you select this command, the ISO image is inserted but it is not added to your CD Management program. If you want to use the ISO image often, run a CD Search to add it to your CD Management program – just like you would add a virtual CD.

When you first install Virtual CD, it recognizes a number of ISO-compatible image file formats:

Nero (*.nrg)

WinOnCD (*.c2d)

CDRWin (*.xmf)

CloneCD (*.img)

ISO files (*.iso)

Bin format (*.bin)

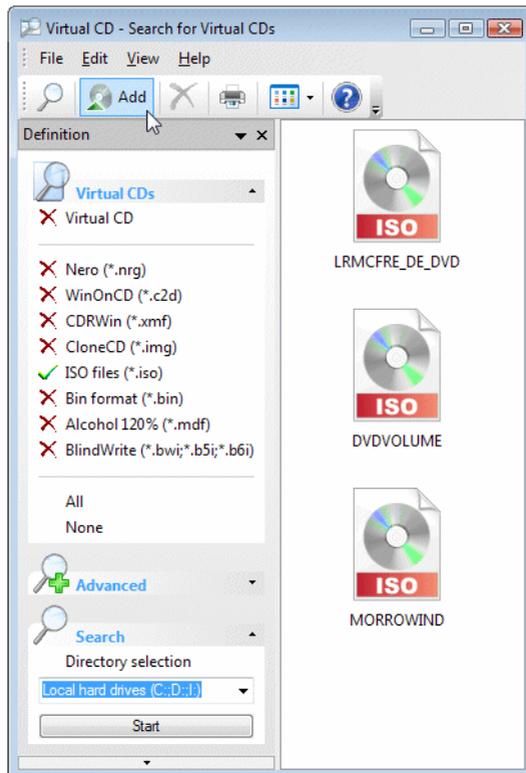
Alcohol 120% (*.mdf)

BlindWrite (*.bwi; *.b5i, *.b6i)



If you want to use ISO-compliant files with an extension that Virtual CD does not recognize, add the required file name extension on the Explorer Integration page of the Virtual CD Settings. In other words, Virtual CD can support any type of ISO-compatible image.

You also have the option of adding ISO-compliant images to your collection of virtual CDs administered in the CD Management program. To do this, run a CD Search and select the criteria for the desired ISO images. The procedure for adding the images found is the same as that for adding virtual CDs to CD Management.



Creating ISO Images

ISO images have a standardized format, which makes them well suited to sharing with others, since they can be processed by most programs. There are a number of ways to create ISO images in Virtual CD:

- On the **Target** page of the Image Wizard, specify **ISO image** as the type of image you wish to create.
- Use the **v9 - ISO copy** template (for example, when using the One-Click Copy method).
- Use the Blank Media Wizard to create a virtual ISO blank.



ISO images can also be passed on to others in the form of a Smart Virtual CD.

Limitations of ISO Images

Because ISO images do not have the same structure as virtual CDs, not all Virtual CD features are available for use with ISO images. Virtual CD properties (such as the comment) can only be applied to a limited extent or, in some cases, not at all.



If you want to have all the functions available for a particular ISO image that you can use with virtual CDs, you need to convert the ISO image to a virtual CD. To do this, add the ISO image to your CD Management, right-click on it, and select **Quick-convert** from the shortcut menu. Converting an ISO image to a virtual CD takes very little time, because it is simply a matter of writing some small data files.

ISO images are always data CDs. Some CD-recording software and other programs might create image files that are not ISO compliant, such as proprietary file formats or audio rather than data CDs.



Virtual CD supports only ISO-compliant images.

Some images may have non-standard formatting, even though they were created from data CDs in ISO-compliant formats. Virtual CD can read such images, but cannot apply the particular functions it has for handling non-standard formats.



To make a viable image from a CD that uses a non-standard format, the image must be created using the Virtual CD program.

Any time an ISO image is displayed in Virtual CD programs, only those functions that can be applied are available in these programs. The **CD Search** program, for example, finds only those images that are supported by Virtual CD and thus can be added to CD Management.

Converting Images

Virtual CD can convert data images from one format to another. A distinction is made between the **Quick-convert** function available in CD Management and a **Full conversion**. The quick conversion involves writing a few control files, which takes hardly any time at all. In a full conversion, an entire image is written. In this case it is particularly important to make sure there is enough disk space available for the new image.



Only a full conversion produces an image that supports all of the features available for Virtual CD images.

The Virtual CD Image Converter performs the full image conversion. You can run the Image Converter from CD Management or the Toolbox. You can choose from the following conversion options:

Convert source to ISO image: Converts a virtual CD or an ISO-compatible image (such as a Nero image) to an ISO image.

Convert source to virtual CD: Converts an ISO-compatible image to a virtual CD.



If conversion of a given image is not possible, **Cannot perform conversion** is displayed.

The following example demonstrates the conversion of an ISO image to a virtual CD.



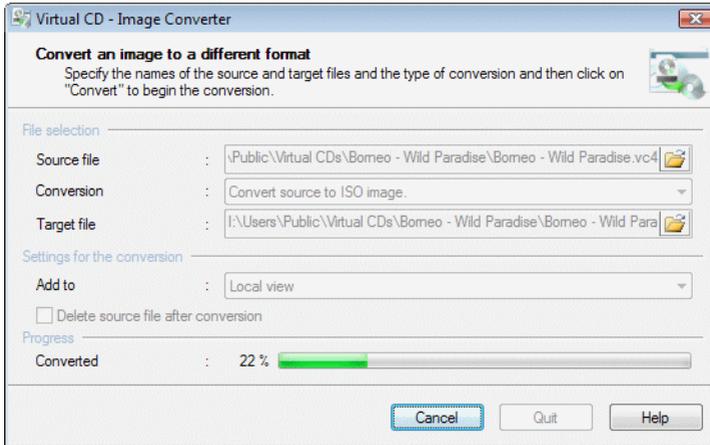
The first step is to locate an ISO image to convert. To do this, we run **CD Search** and search the hard disk for ISO files.



To run the Image Converter, we select an ISO file from the list of files found and choose **Convert image files** in the **Tasks** section of the sidebar.

2

The Image Converter runs and automatically specifies the selected files as the source. **Convert source to virtual CD** is activated automatically; the target file name is a combination of the source file name and the **.vc4** extension.



3

Before the conversion starts, you can specify whether the resulting image is added to the **Local** view, the **Global** view, or neither. You can also define whether the source file is deleted automatically after the conversion. When all settings for the conversion are configured, click on **Convert** to convert the image.

The conversion may take as long as several minutes, depending on the data volume of the source image. The resulting virtual CD supports all of the functions available in the Virtual CD program.

Burning Virtual CDs on CD-ROMs

Methods for Backing Up Virtual CDs

No matter how many or how few virtual CDs you have, the time may come when you want to make backup copies of them on physical CD-ROMs.

To do this, you can choose from the following methods:

Make a 1-to-1 copy of each virtual CD

Make a Smart Virtual CD

Notes on Burning CDs



The Virtual CD Burner cannot make copies of CDs or images that have non-standard formats.

For this reason, the VCD Burner performs an analysis on the source (whether image file or CD), just as the Image Wizard does. If the analysis turns up any indication that it might not be possible to burn a physical copy, the VCD Burner suggests alternatives. Which alternatives may be suggested depends on the type of source CD:

Virtual CD: For virtual CDs that have non-standard formats (e.g., if CD geometry data is included), the Burner suggests making a Smart Virtual CD.

Physical CD: If a physical CD has a non-standard format, the VCD Burner suggests making a virtual CD from the physical CD.



These recommendations from the VCD Burner program are intended to help prevent the waste of blank CDs. You can still try making a 1-to-1 physical copy if desired. In this case, we recommend using a re-writeable (RW) CD or DVD for your first attempt, to make sure that the burning process can be completed successfully and the results meet your requirements.



Both the Burner program and the Smart Virtual CD Burner offer the option of running the **Eraser Wizard** to delete data from the RW medium before writing.

Creating 1-to-1 Copies

Virtual CD can make exact, 1-to-1 copies from any of a number of sources. The Virtual CD Burner can make 1-to-1 copies of the following:

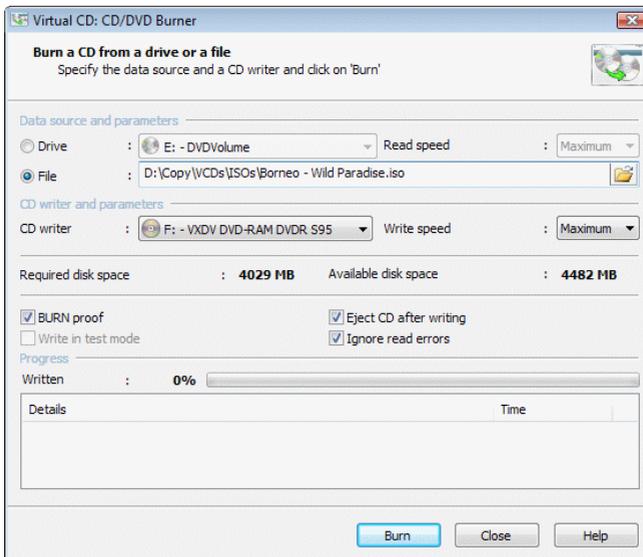
Physical CDs

Images (virtual CDs or ISO-compatible images)

To make an exact copy, proceed as follows:



Run the Virtual CD Burner from the Virtual CD sidebar by selecting **Burn a 1:1 copy** under **Tasks**.



Select the desired source in the Virtual CD Burner; i.e., the CD or image you wish to copy. To do this, select the CD drive that contains the desired virtual or physical CD, or select an image file.



In our example, we select an ISO image that we want to burn onto a CD. You can choose a different type of source if desired.



The Virtual CD Burner also supports burning **cue sheets** created when images are made with other programs. You can specify a cue file as a source just like any other file.

2

Once you have inserted a target medium with sufficient available space and specified the CD recording drive, you can define a number of parameters relevant to the writing process. When you are ready, click on **Burn** to start burning the CD.



If the CD recorder is the only physical CD drive on your computer, you can choose whether Virtual CD creates a virtual copy first. Once the virtual CD is completed, it is automatically defined as the source and the burning process can be started as soon as you insert a blank disk. If you wish, you can have the virtual CD deleted automatically once the burning process has been completed.



The burning process cannot start if the blank CD in the target CD recorder does not have enough space available. If the target medium is a re-writable CD, however, you are offered the option of running the Eraser Wizard to delete data from the medium.

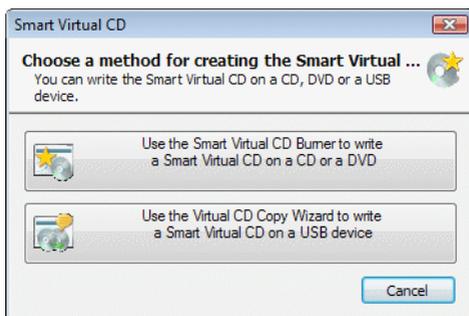
Creating Smart Virtual CDs

Smart Virtual CDs make it easy to share virtual CDs with others. There are two ways to make Smart virtual CDs; which method is used depends on your target medium:

Blank CD or DVD: The Smart Virtual CD Burner lets you burn your choice of virtual CDs on a CD or DVD.

USB flash drive: You can use the Copy Wizard to write the selected virtual CDs on a USB flash drive.

When you initiate the process for making Smart virtual CDs, you are prompted to specify the method.

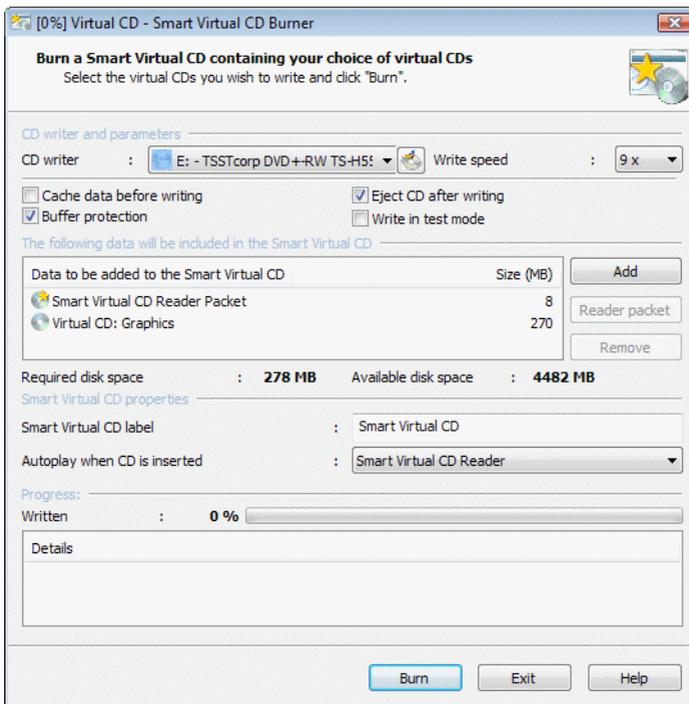


Burning Smart Virtual CDs

The Smart Virtual CD Burner lets you burn any number of virtual CDs (restricted only by the space available on the blank CD or DVD) onto a single physical CD or DVD.

1

To do this, select the virtual CD(s) you want to burn in CD Management and click on **Burn a Smart Virtual CD/DVD** in the **sidebar** to run the Smart Virtual CD Burner. In the “Choose a method...” dialog, click on **Use the Smart Virtual CD Burner to write a Smart Virtual CD on a CD or a DVD**.



We recommend selecting the desired CDs first and running the Smart Virtual CD Burner from your CD Management program because with this method, the selected CDs are loaded in the Smart Virtual CD Burner list automatically. If you select a folder in CD Management, all CDs in that folder are added to the list.

2

Insert your blank CD or DVD now, if you have not done so already. The Smart Virtual CD Burner tells you whether the blank disk has enough space available for the selected virtual CDs. If there is not enough space available, you can remove CDs from the list by clicking on **Remove**. Click on **Burn** to write the data on the CD.

3

When the writing process is completed, remove the physical CD from the CD-ROM drive and click on **Exit** to close the Smart Virtual CD Burner.



The **Smart Virtual CD Reader Packet** should be included on every Smart Virtual CD. It ensures that the virtual CDs stored on the CD can be used on any computer, **even if the Virtual CD program is not installed.**

You can define a CD label and/or an autostart program, if desired, in the **Properties of the Smart Virtual CD**. The autostart options give you the following choices:

- Run the Smart Virtual CD Reader
- Run the Windows Explorer
- Deactivate autoplay for this Smart Virtual CD



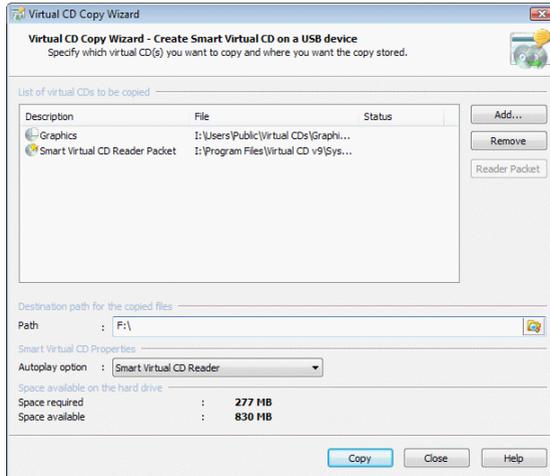
The autostart function can only be used if the Smart Virtual CD Reader Packet is included on the Smart Virtual CD.

The Smart Virtual CD as Flash Drive

The Copy Wizard can turn a USB flash drive into a “Smart virtual CD drive.” The procedure is remarkably simple.

1

Select **Burn a Smart Virtual CD** in the **Sidebar** of the CD Management program. In the “Choose a method...” dialog, click on **Use the Virtual CD Copy Wizard to write a Smart Virtual CD on a USB device**.



2

In the **Path** field, enter the drive letter used for the **USB flash drive**. The Copy Wizard shows you whether sufficient space is available on the USB flash drive. Once you have added the desired virtual CDs, click **Copy** to create your Smart virtual CD drive.

Once the copying operation has been completed, the autoplay function is triggered by simply plugging the flash drive into a USB port, and the virtual CDs it contains are immediately available.

Unlike the procedure for burning a Smart virtual CD, this operation does not affect existing data on the flash drive.



The Copy Wizard extends the content of a Smart virtual CD drive. If the USB flash drive already contains virtual CDs, the new CDs are added and the new file names are added to the list in the Smart Virtual CD Reader.



The advantage of a Smart virtual CD drive over a Smart virtual CD is that it usually takes less time to make.

Using Smart Virtual CDs

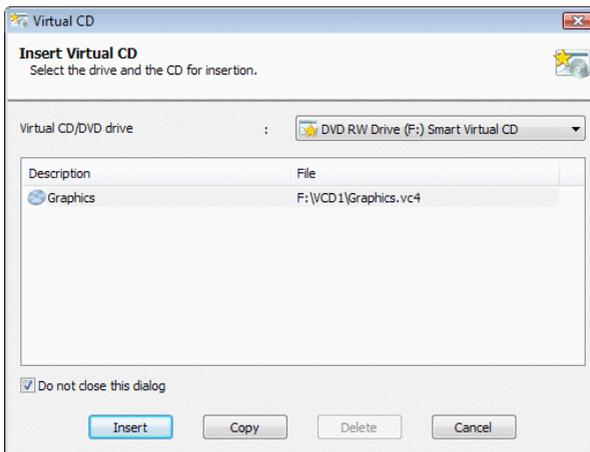
When you insert a Smart virtual CD in a drive, or plug a Smart virtual CD drive into a USB port, the Smart Virtual CD Reader runs automatically – unless the autoplay function has been deactivated, in which case you need to open the Windows Explorer and run the **Start.exe** program on the Smart virtual CD/drive.

The Smart Virtual CD Reader Packet checks whether Virtual CD or the Smart Virtual CD Reader has already been installed on the computer. If neither program is found, the Smart Virtual CD Reader is installed. During this process, a virtual drive is set up on the computer, enabling you to use the virtual CDs that are on the Smart Virtual CD.



If a Virtual CD program installation is found, the Smart Virtual CD Reader checks whether its own version of the Virtual CD driver is newer than the version on the computer. If it is, then the driver on the computer is updated.

If Smart Virtual CD Reader has been selected for the autoplay functions, the Smart Virtual Selection dialog opens.



In this dialog you can define which virtual CD is inserted in which drive. When you click on **Insert**, the virtual CD is loaded in the selected virtual drive and the selection dialog closes.

Remove makes it possible to delete virtual CDs from a Smart virtual CD/drive, if the media is recordable. Particularly when using a Smart virtual CD drive, this makes it easier to adapt to limited disk space.



If the Virtual CD program is installed on the computer, you can click on **Copy** to open the Copy Wizard and copy the selected virtual CD from the Smart virtual CD to the hard disk.

If there is only one virtual CD on the Smart Virtual CD/driver and only one virtual CD drive available, the CD is inserted automatically. In this case, the selection dialog does not open.



If the Virtual CD program is not installed on the computer, only those virtual CDs that are on the Smart Virtual CD/driver can be used. CDs cannot be copied to the local hard drive and then used.

Removing the Smart Virtual CD Reader

To remove the Smart Virtual CD Reader from your computer, open the Windows Control Panel and select **Uninstall a program**. (Depending on your Vista setup, you might need to double-click on “Programs and Features” first.) Select **Smart Virtual CD** and start the de-installation process. The Wizard removes all components of the Smart Virtual CD Reader from your computer.

Advantages of Smart Virtual CD Technology

When you make a Smart Virtual CD, you do not get an exact, 1-to-1 copy of your virtual CDs, but there are a number of advantages that make the Smart Virtual CD technique preferable to burning 1-to-1 copies.

You can burn all your virtual CDs: You cannot burn a 1-to-1 copy of virtual CDs with audio tracks stored as sound files. This limitation does not apply to Smart Virtual CDs.

The Smart Virtual CD flash drive is an easy-to-use transport medium: Using Smart virtual CD drives makes it easier than ever to copy and transport virtual CDs. Moving virtual CDs around and making them available in other systems is greatly facilitated by the use of Smart virtual CD drives, because it is easy to add and remove virtual CDs to and from the flash drive.

Information required for non-standard formats is supported: If a virtual CD requires information for non-standard formats (unreadable sectors, CD geometry data, etc.), this information is automatically included on the Smart Virtual CD. This means any virtual CD that will run on a machine with the Virtual CD program installed will also run using the Smart Virtual CD technique.

Protection from unauthorized access: Virtual CDs that are protected by a password and encryption can only be accessed by users who know the password.

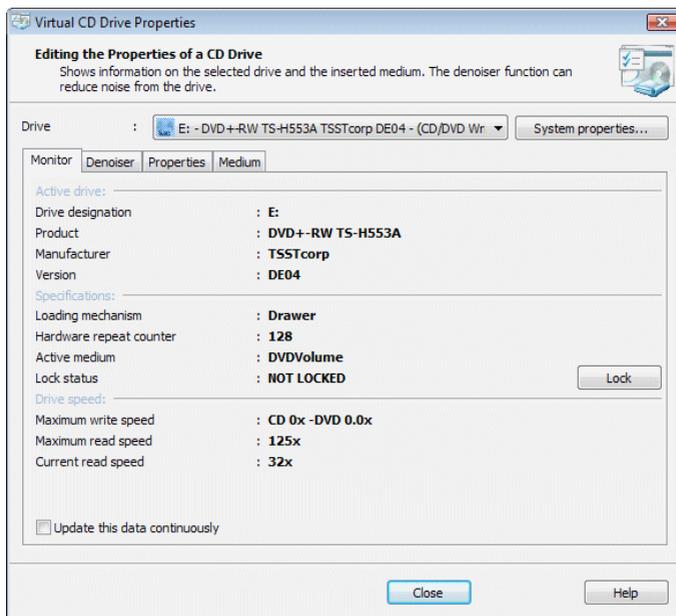
Burn all the CDs you need on one blank: More and more applications these days are supplied on multiple CDs. Since Smart Virtual CD technology can also be used to burn DVDs, you can put together all the CDs required for a given application on one DVD. Never again will you have to ask yourself, “Where the heck is that third CD hiding...?”

Availability ensured by Smart Virtual CD Reader: You can add the Smart Virtual CD Reader Packet to every Smart Virtual CD, so the virtual CDs will run on computers without a Virtual CD installation.

Physical CD Drives

Drive Properties

You can view details on a drive, as well as any medium inserted in it, by opening the **Drive Properties** window. To do this, open **My Computer**, right-click on the desired drive, and select **Drive Properties**.



This dialog shows the properties of the selected drive and lets you open the Windows system properties pertaining to the drive as well. The **Properties** dialog is divided into the following pages:

Monitor: Shows the current status of the drive. Certain values, such as the current drive speed, can be updated continuously if desired.

Denoyer: The denoyer regulates the drive speed and other factors that make the drive quieter.

Properties: Shows information retrieved from the drive.

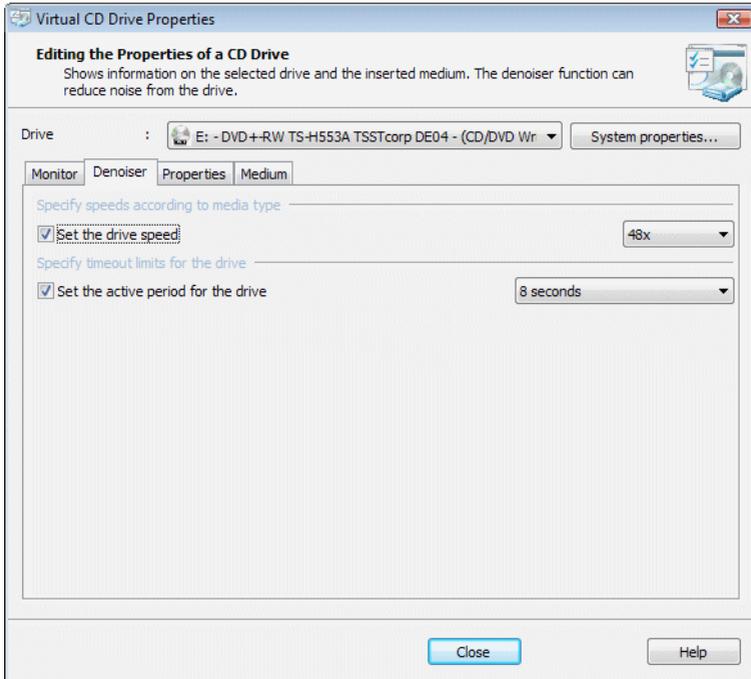
Medium: If there is a CD in the drive, this page shows information on the CD tracks.



You can open a **Drive Properties** window for virtual CD drives as well, although most of the settings are not applicable.

Denoiser: for a Quieter System

Everyone is probably familiar with the problem of loud CD drives. The level of noise produced can depend on the quality of the drive mechanics and on the CD in the drive, and in some cases is considerable. The **Virtual CD Denoiser for CD Drives** can reduce the noise emitted by physical CD drives. You can configure settings for the denoiser in the Drive Properties.



The level of noise produced by a CD drive depends on the following factors:

- The speed of the drive: CD drives usually operate at maximum speed, to read the data on the CD as quickly as possible. Reducing the rate of speed decreases the noise level, but it also slows down data readout.
- The amount of time during which the CD remains active: To save time, a CD in a drive remains active for a certain period following the last access; if it is accessed again within that time period, it does not need to be reactivated before its data can be read. The duration of this "active period" can be defined through a number of configuration settings. The longer the CD remains active, the longer the drive makes noise, even if the CD is not in use.

It is not easy to select an all-purpose default configuration for the denoiser, because the optimum settings depend on a lot of different factors.

The following two cases are presented as an example:

1. For applications that only access their CD on startup, and not afterwards, the period of activity can be set very low.
2. For applications (such as an encyclopedia) that read the CD almost constantly, the speed can be reduced but the active period should not be shortened.

Another important factor is the environment in which the drive is operated. On a laptop, for example, the active period is usually short, because running the drive is a significant drain on the battery.

We recommend experimenting with the configuration options to find the best settings for your CDs and your drive's environment.



Keep in mind that if the drive speed is too low, there may be a considerable delay between insertion of the CD and accessing the data it contains.



Not all drives support the settings for adjusting the drive speed. If this feature is not supported, you can only use the drive's maximum speed; however, you should still be able to adjust the active period. If a setting cannot be modified, it is not accessible in the dialog.

Some applications change the speed of a drive, and some drives “forget” modified settings when the computer is restarted. For this reason, Virtual CD checks the denoiser settings on startup and modifies drive settings accordingly, if needed.



To create virtual CDs as quickly and efficiently as possible, the Image Writer switches the denoiser off and uses optimal drive speeds during the 'write' process.



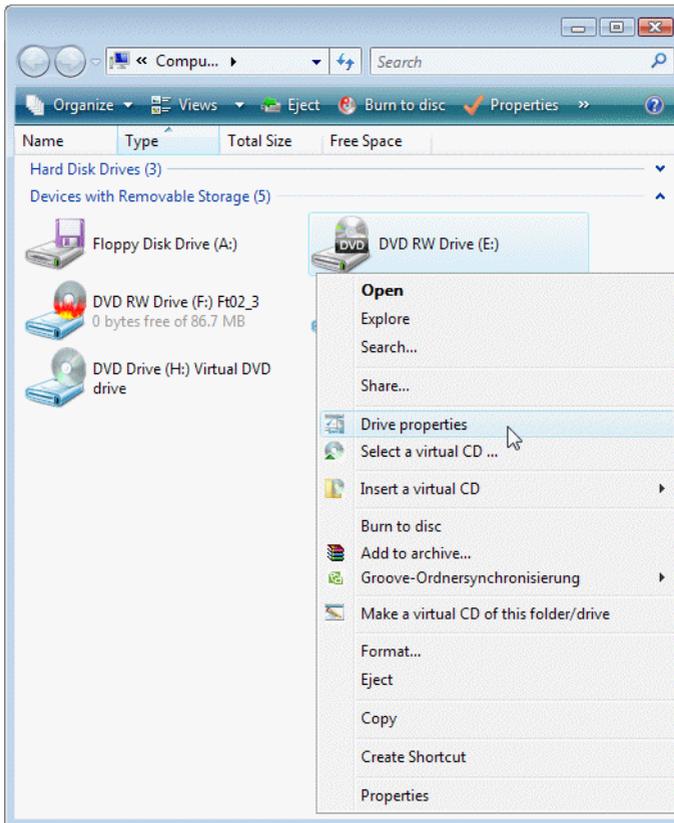
With certain applications (e.g., some CD burning programs) reducing the drive speed can result in errors. If this happens, deactivate both settings on the **Denoiser** page to effectively switch off the denoiser.

Reducing the Noise from a CD Drive

The noise produced by a CD drive can be a significant annoyance at a computer workplace. The following is an example of how to configure a drive that is not frequently used, to reduce the level of disturbance.

1

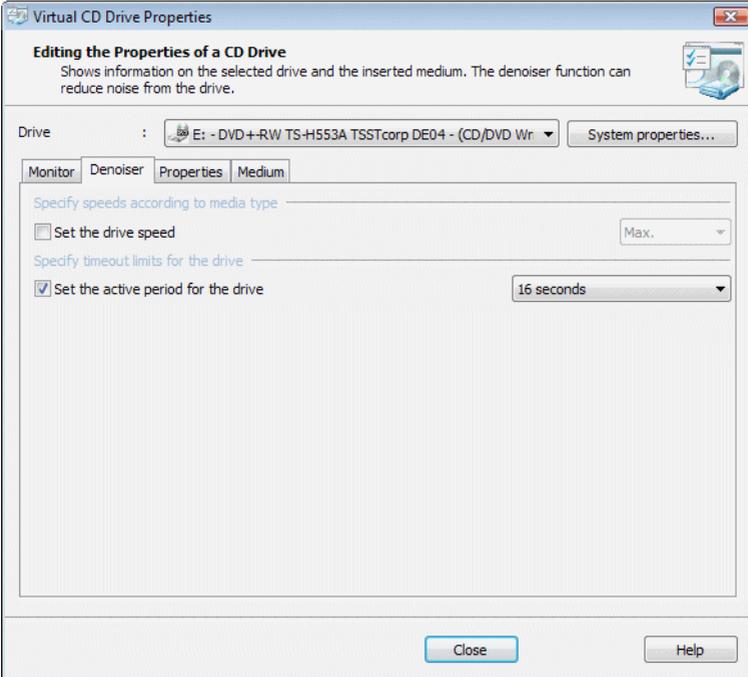
To open the dialog for configuring drive settings, double-click on **My Computer**, right-click on the desired CD drive and select **Drive properties** from the shortcut menu.



Click on **Denoiser** to open the required page.

2

In our example, we leave the drive speed setting on **Maximum** and set the active period to 16 seconds.



That's it; the settings are active immediately and the computer is quieter. Close the Drive Properties dialog, or select a different drive.



Use the new settings for a while to see whether they have the desired effect.



If you have problems running an application on a CD, follow the instructions above to open the settings page and change or deactivate the settings as needed. When you deactivate these settings, the denoiser reactivates the default drive settings.

Security Measures for Physical CDs

Controlling the Use of CDs

With Virtual CD, not only can you create, manage and run virtual CDs, you can also control which CDs are used in your system. With virtual CDs, this control is fairly simple to implement: Just assign a password and the virtual CD can no longer be used by your kids, or your co-workers, or anyone else who doesn't have the password. It is usually a little more difficult to exercise this kind of control over physical CDs. Now, Virtual CD has a solution for this issue too. There are two approaches:

- **Disable the use of physical CDs:** When you activate this option, Virtual CD will automatically eject any physical CD-ROM as soon as it is inserted.
- **Permit the use of specified CDs:** To do this, activate the option outlined above to prevent the use of physical CDs and then exclude your choice of CDs from this restriction.



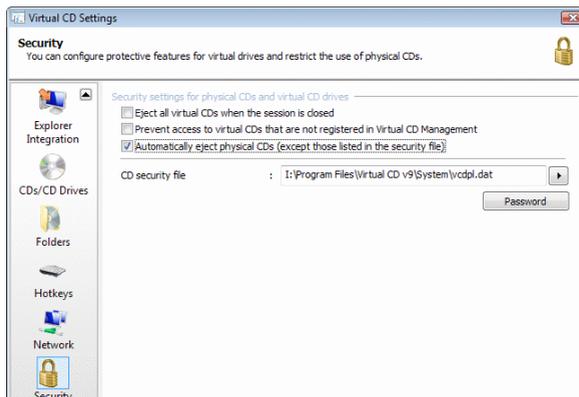
The settings that control the use of physical CDs are applied for all users of the computer on which the settings are configured. Anybody else who uses that computer will be subject to the same settings you configure here for this function.

Disabling the Use of Physical CDs

Preventing the use of physical CD-ROMs is very easy with the Virtual CD program.

1

Open the Virtual CD Settings program; e.g., from the Toolbox, and select the **Security** page.



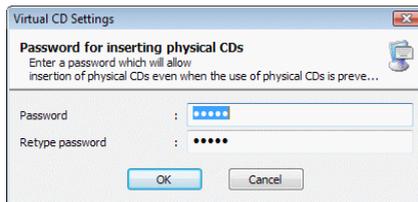
Activate the **Automatically eject all physical CDs (if not named in security file)** option.



As soon as you click on **OK**, any CD in a physical CD drive is ejected. The only way to have a CD remain in a drive is to deactivate this setting.



When this option is active, you can click on **Password** to define a password that will temporarily deactivate it.



If a password has been defined for this function, a new item is added to the **Tasks** section of the sidebar: **Permit use of physical CDs**.

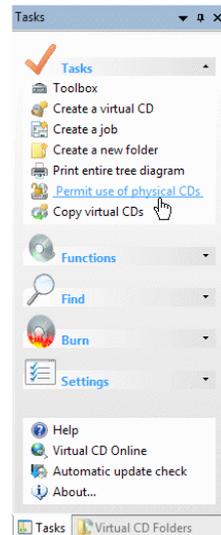
When you click on this item, you are prompted to enter the password assigned to this function. Once you enter the password, physical CDs can be used again.



The text for this item under **Tasks** changes to: **Prevent use of physical CDs**. Remember to switch this function off again when you have finished using the physical CD!



Steps 2 and 3 (above) are optional. Bear in mind, however, that it can be useful to have the option of inserting a physical CD now and then. For example, when you want to make a new virtual CD, you don't have to run the Settings program just to permit the insertion of your source CD.



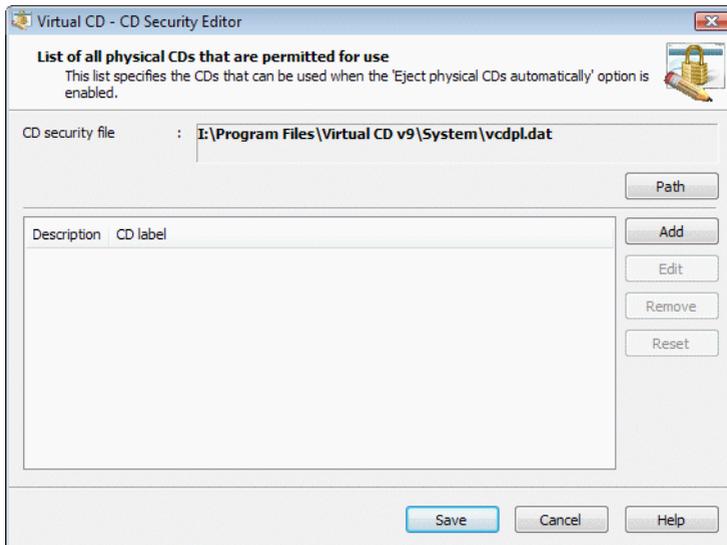
Permitting the Use of Specified CDs

It can be handy to prevent the use of physical CDs. There are limits to the usefulness of this function, however; for example, if you want to use a particular CD but don't want to deactivate the overall control of physical CDs. This situation can occur both at home and at the office.

Here is an example: You want to let your daughter use the "Mathematics" CD for school work, but you don't want her playing the computer games she has on CD. One solution would be to make a virtual CD from the math CD. However, if this is not an option (e.g., due to disk space limitations), you can disable the use of physical CDs and then configure Virtual CD to permit use of the math CD.



Place the CD you wish to allow in your physical CD-ROM drive. Open the Toolbox and run the CD Security Editor, to edit the CD security file.



The CD Security Editor defines a list of CDs that can be used (on that particular computer) even when the use of physical CDs is disabled by the Virtual CD settings.

2

To add a CD to the list of permitted CDs, click on **Add**.



In the next dialog, select the **CD drive** containing the CD. Enter a meaningful **description** and click on **OK** to exit. The CD is now in the list of permitted CDs defined by the CD Security Editor. Once you click on **Save**, the CD can be used.



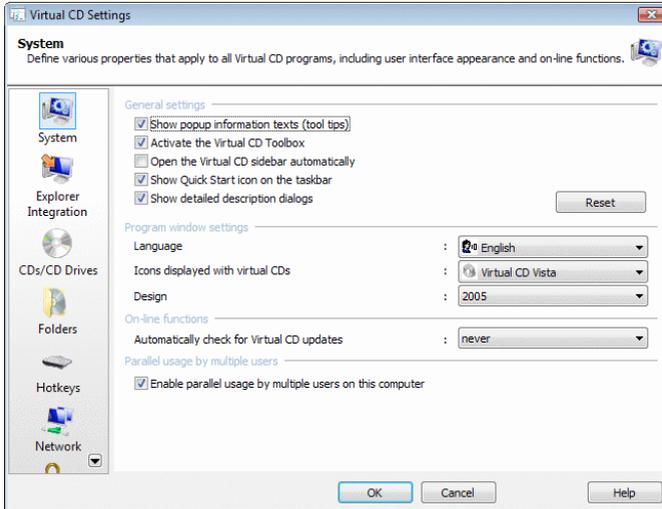
The CD security file (**vcdpl.dat**) is stored in the Virtual CD system directory. If this file is deleted, all physical CDs are blocked from use when the corresponding option is activated.

When you open the CD Security Editor, the most recently opened CD security file is loaded automatically.

Configuring your Virtual CD Program

Virtual CD Settings

Many of the functions and controls in Virtual CD can easily be adapted to your own requirements. One of the programs you can use to configure most of the available options is the Virtual CD Settings program. You can run the Settings program from the Toolbox, the Quick Start utility or CD Management.



This program is divided into different dialogs according to topic, making it easier to find the settings you want to edit. Some of these areas are described in detail in other sections of this documentation.

System: The options on this page define global settings, the program window layout and on-line functions.

Explorer Integration: On this page you can choose Virtual CD functions and specify how they are integrated in your Windows Explorer.

CDs/CD Drives: Settings affecting virtual and physical CDs and CD drives are configured here.

Folders: This page defines the paths in which Virtual CD stores its files and configurations.



Keep in mind that the **Folder for local virtual CDs** defines only where new local virtual CDs are created. The **Folder for local configurations** is the folder that defines where local Virtual CD configuration files are stored.

Hotkeys: Virtual CD lets you define your own keyboard shortcuts for running Virtual CD programs and other programs.



If you define a hotkey combination that is assigned to a different function within the context of another program, there is no way to predict which of the two functions will be activated when you press this combination.

Network: If you use Virtual CD in a network, you need to configure the settings on this page.



The Virtual CD Network Management Server enables centralized administration of Virtual CD workstations in a network. This is a separate product and is *not* included with your Virtual CD installation.

Security : You can configure security mechanisms for virtual drives and the use of physical CDs on this page.

Adding/Removing Virtual CD Drives: Emulation Settings

Virtual CD lets you add and remove virtual drives as needed. In addition to these functions, there are a number of other configuration options for modifying emulation features and integrating Virtual CD in your system.

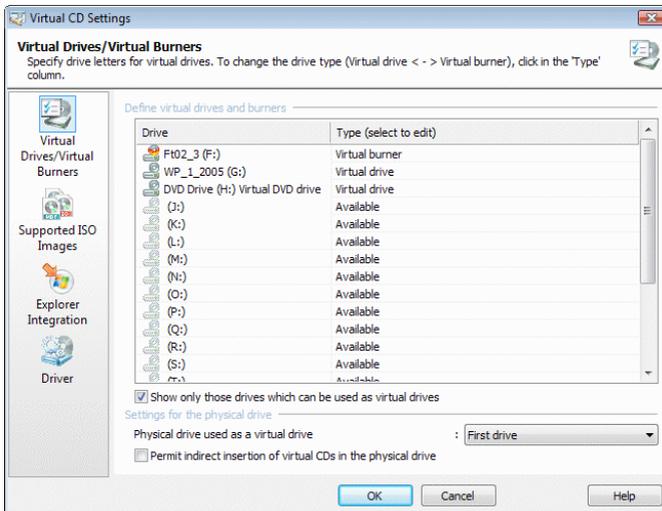


When you select the **Add/remove virtual CD drives** command, you are presented with quite a few other options in addition to those for defining the number and designation of virtual drives in your system. Still, we retained this command as the portal to all these settings since changing drives is a task commonly associated with the other features available here – particularly for users of the previous Virtual CD version(s). This is why selecting “Add/remove virtual CD drives” opens the **Emulation Settings**.



This program has to be opened with Administrator rights. If user account control (UAC) is active, you are prompted to confirm as Administrator before the program opens.

You can run the Emulation Settings program from CD Management, the Quick Start utility or the Toolbox.



The Emulation Settings are sorted according to topic as follows:

Virtual Drives/Virtual Burners: Here you can specify which drive letters are used for virtual drives and/or virtual burners. To change a setting, click on the desired drive in the **Type** column to open a list of drive types that you can assign. In most cases, 3 to 5 virtual drives are sufficient for general use. You can add more at any time. You can also specify a physical CD drive on this page for use with virtual CDs.



You cannot use a drive letter that is already allocated to another drive (e.g., to a hard drive).



You cannot remove all virtual CD drives, as the Virtual CD program requires at least one drive.

Supported ISO images: Virtual CD can process not only virtual CDs, but also ISO images. On this page you can specify the types of ISO image supported by your Virtual CD installation. For the specified ISO types, Virtual CD adds menu items to Explorer menus for inserting and ejecting images, and other commands.



If a different application has already been entered for a particular ISO type, that setting is NOT overwritten by your settings in Virtual CD. In such a case, only supplemental entries are made for the ISO type.

Explorer Integration: Virtual CD integrates virtual drives in the computer. On this page you can specify the designations and icons shown for empty virtual drives. Furthermore, you can define whether Virtual CD programs are included for selection in the autoplay dialog that opens when a CD is inserted.

Driver: The parameters on this page relate to the Virtual CD driver, which makes the virtual CD drives available in your system.



Parameters relating to the driver do not usually need to be changed. These settings should be modified only under exceptional circumstances.

Once you have made the desired changes in this window, click on **OK** to apply your settings. If you made changes in virtual CD drives, it may take several minutes to apply the new settings; in some cases, it might be necessary to restart the computer.

Virtual CD Jobs

Long-Running Tasks

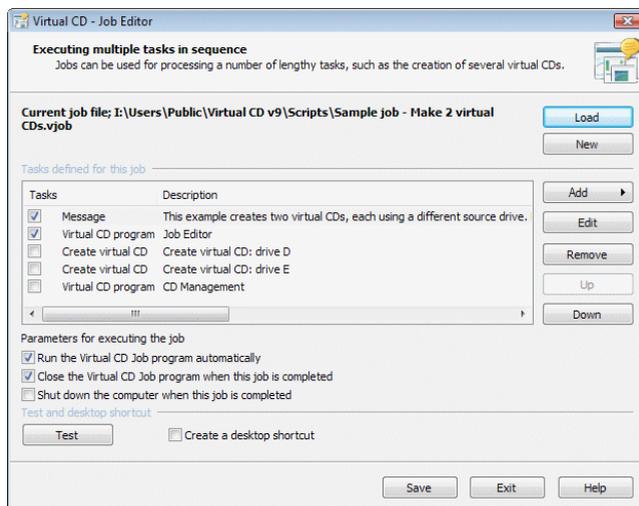
A Virtual CD Job is the perfect tool processing multiple tasks automatically. For example, you can use a job to create several virtual CDs in series. Virtual CD job processing requires two program components:

Job Editor: This is the program for creating and editing jobs.

Job Execution: This is the control program that executes your Virtual CD jobs.

Job Editor

The Job Editor lets you create and edit jobs. To open this program, select **Create a Virtual CD Job** in the Toolbox.



The full name of the job file that is open in the editor is shown above the list of job tasks. The following controls are available in this dialog:

Load: Opens a selection dialog for loading an existing job file.

New: Removes all entries from the list of tasks so you can create a new job.

The Job Editor lets you put together a list of tasks which are then performed in sequence. The tasks are listed under **Tasks defined for this job**. Only those tasks that are marked with checkmarks will be performed when the job is executed. The following buttons next to this list let you add, remove, edit and change the positions of tasks:

Add: Opens a menu of tasks you can add to the job.

Edit: Opens a dialog for editing the selected task.

Remove: Removes the selected task.

Up: Moves the selected task one position higher.

Down: Moves the selected task one position lower.

The options below the list of tasks let you specify certain **parameters for executing the job**:

Run the Virtual CD Job program automatically: A job selected directly (for example, in the Quick Start menu) is executed automatically.

Close the Virtual CD Job program when this job is completed: Closes the Job Execution program automatically after all tasks in the job have been executed.

Shut down the computer when this job is completed: Shuts down the computer automatically after all tasks in the job have been executed.

Click on **Test** to test the job with its current configuration settings.



You do not need to save the job before testing it, as the Job Editor creates and executes a temporary job file.

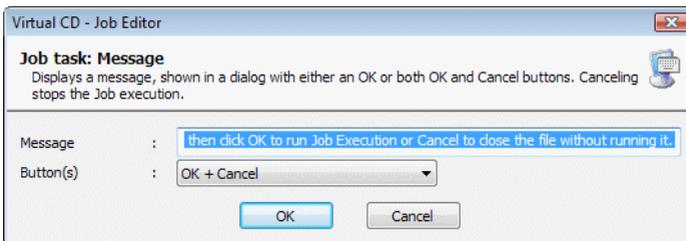
The last option lets you define whether a **desktop shortcut** is created when the job is saved. If so, you can execute the job by double-clicking on the shortcut.



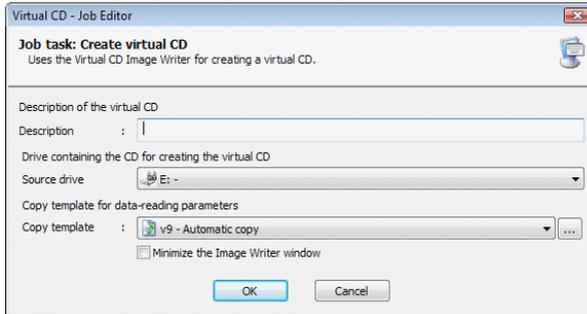
Job Tasks

Jobs can contain the following tasks:

Message: Shows a message or a user prompt. You can add a prompt, for example, that determines whether the job is executed or not. With the message shown in this example, the job is not executed if the user clicks **Cancel**:



Create image: Runs the Image Wizard and creates a virtual CD. You can enter a **description** in the Job Editor’s “Create virtual CD” dialog that identifies the virtual CD. You have to specify the **source CD drive** and the **copy template** you wish to use. You can also choose to have the Image Wizard window **minimized** while creating the virtual CD.



If you do not enter a description, the CD label is used as the description.

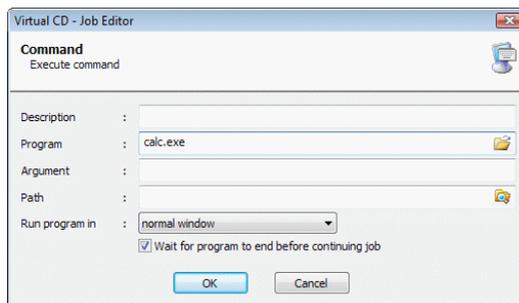


Subsequent tasks in the job are not performed until the virtual CD has been completed.



The “Create image” task runs automatically only if a viable source CD has been inserted in the specified source drive.

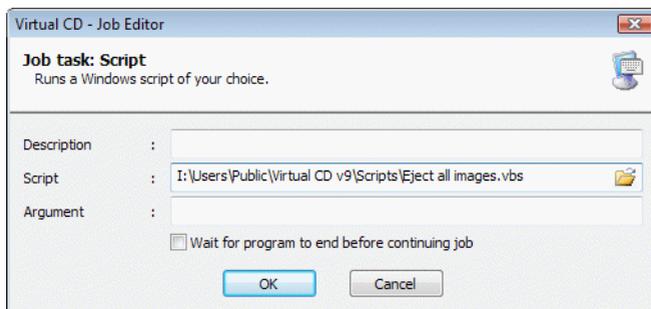
Command: Executes the command you specify.



Virtual CD program: Runs the specified Virtual CD program.



Script: Executes the specified script.



For the latter two tasks, you can specify whether or not job processing pauses until the end of the Virtual CD program or script.

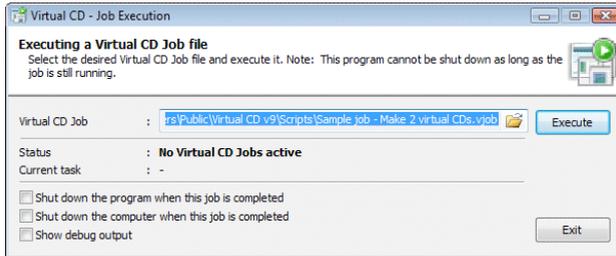
If you enter command line arguments, keep in mind that they might need to be enclosed in quotation marks.



A file name, for example, must be enclosed in triple quotation marks. For example (with no further arguments entered): `"""<file name>"""`.

Job Execution

Job Execution is the control program that executes Virtual CD jobs. It usually runs automatically when a job is selected. If you open the Job Execution program directly (e.g., in the Toolbox), as opposed to selecting a job first – for example, in the Quick Start menu – then you need to specify which job is to be executed.



You can only run one instance of the Job Execution program. Because Virtual CD jobs can contain a number of tasks that should not run in more than one instance, it is not possible to execute more than one job at a time.

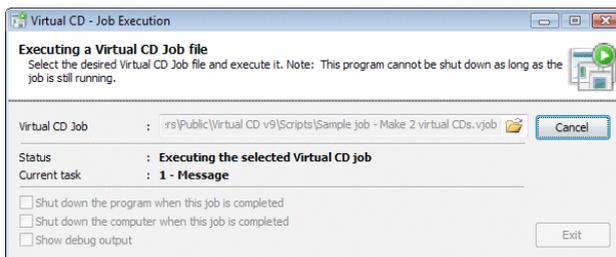
You can specify the following settings before the selected job is executed:

Shut down the program when this job is completed: Shuts down the Job Execution program after all tasks have been processed.

Shut down the computer when this job is completed: Shuts down the computer after all tasks have been processed.

Show debug output: Messages generated during processing are shown. This lets you check whether all parameters have been entered correctly before a task is executed.

Once job execution starts, all controls in this dialog are deactivated except “Cancel.”



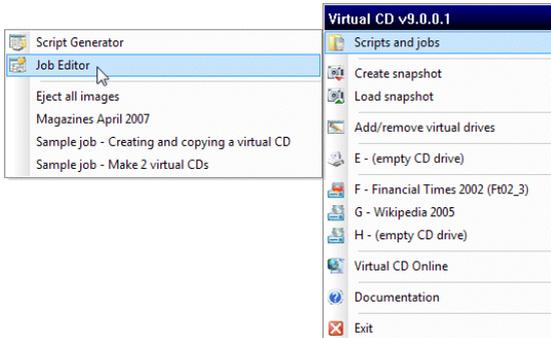
If you cancel execution, the job is not stopped until the task currently being processed has been completed. If the job is currently creating an image, the job is not stopped until the image is completed.

Creating and Executing a Job

To demonstrate how easy it is to use Virtual CD Jobs, the following example illustrates the steps for defining a job that creates a virtual CD then converts it to an ISO image.

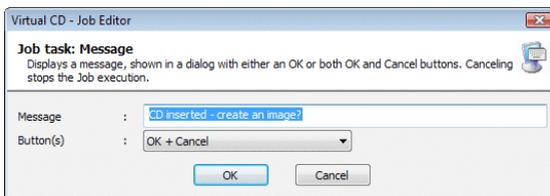
1

Run the Job Editor by selecting it from the Quick Start menu.



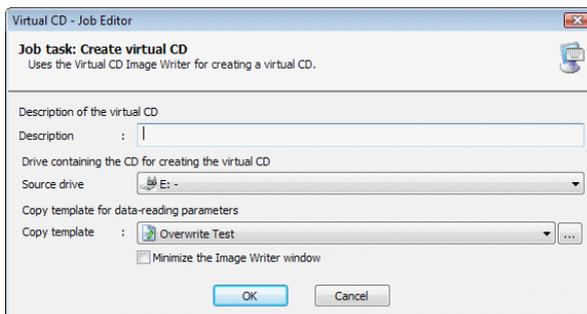
2

Click **Add** to add a message dialog. This will help make sure the job is not executed inadvertently.



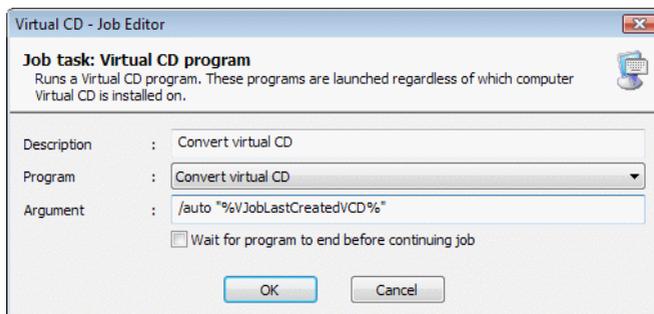
3

Now add a “Create image” task to make a virtual CD from the CD in the drive.



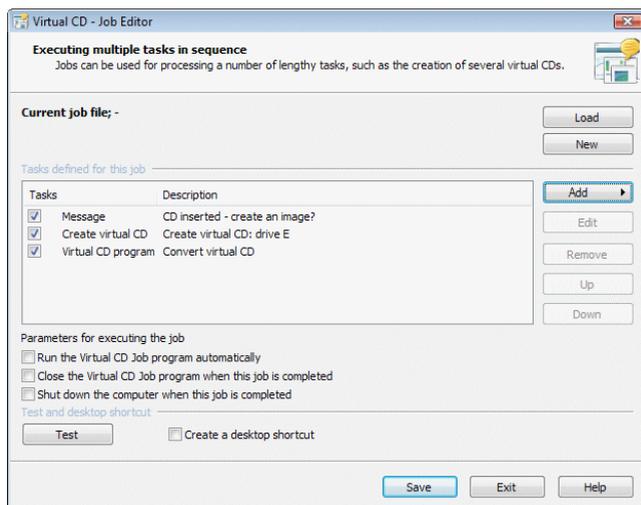
4

The last task, “Virtual CD program,” runs the Image Converter. Enter the following in the “Argument” field: `/auto "%VJobLastCreatedVCD%"` The **auto** argument sets the conversion to run automatically, and `%VJobLastCreatedVCD%` is an environment variable that contains the name of the most recently created virtual CD. This is the source image for the conversion. The target file is created using the name of the virtual CD, and then converted to an ISO image.



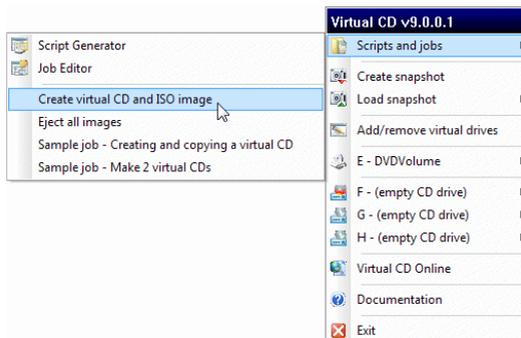
5

The job is now ready for testing. Remember to insert the source CD for creating the virtual CD before you test the job.



6

If the test is successful, you can save the job if desired. In our example, it is named "Create virtual CD and ISO image" and is available, for example, in the Quick Start menu.



Sample Jobs

The two sample jobs supplied with Virtual CD demonstrate some of the possibilities available.

Example - Creating 2 virtual CDs: This job generates two virtual CDs in succession from two different source drives. You can add to this job, for example, to have it make images of the virtual CDs in an optical jukebox.

Example - Creating and copying a virtual CD: This job creates a virtual CD and then copies it to another location. You might use this job, for example, to create a virtual CD locally and then copy it to a network location.



Both of these sample jobs have to be adapted to your system before they can be executed. Refer to the Help program for details on this procedure.

Environment Variables

To make Virtual CD jobs more adaptable to a variety of environments, you can enter environment variables to define certain elements, such as path names. In addition to existing system variables, Job Execution provides two internal variables of its own:

%VJobActiveJobFile% – The name of the job file currently being processed is stored here. You can use this to load a job from Job Execution into the Job Editor.

%VJobLastCreatedVCD% – The name of the virtual CD most recently generated by the **Create image** task is stored here. This can be used, for example, to copy the virtual CD to another location.



If the option to show debugging data is activated, you can view the values stored in these variables, to help ensure that you do not generate any unexpected results.

Command Line Arguments

Some Virtual CD programs can be controlled using command line arguments. The following arguments can be used for processing jobs.

Copy Wizard

/auto – The program is executed and shut down automatically

/file:<image file name> – Enter the name of the virtual CD to be copied

/dest:<path> – Target path for copying

/none – The file copied is not registered in Virtual CD Management

/local – The file is added to the local view in Virtual CD management

/global – The file is added to the local view in Virtual CD management

Image Converter

/auto – The program is executed and shut down automatically

/dest:<target file> – Target image

<Source file> – Source image



The used method for conversion is chosen automatically on the basis of the source image.

Virtual CD in the Network

Before you get started...

Virtual CD can run in a network with all its program functions and controls. One of the advantages of network operation is that you can make a single virtual CD available to any number of users.

Regardless of whether you want to install it in your home network or in a company, there are a few things you need to take into account, and several decisions to be made, before you begin installation.

Before you install Virtual CD on your network workstations, think about where you want to install the central configuration files and your virtual CDs. Be sure to choose a machine with sufficient space available for the virtual CDs.



Remember: never install Virtual CD on a server to make it available over the network. If you require an installation with server-specific functions, please ask about our Terminal Server and File Server editions of Virtual CD.



Virtual CD is designed to run on a Windows operating system. If your network runs on a different platform (such as Novell, Linux, etc.), make sure the Windows workstations on which you install Virtual CD can access the folders specified for the program and the virtual CDs.



All **directory names** and **paths to “global” virtual CDs** must be specified using **UNC syntax**. If you use the drive letter, the folders and/or virtual CDs will be available on the workstation where these are configured but may not be accessible over the network.



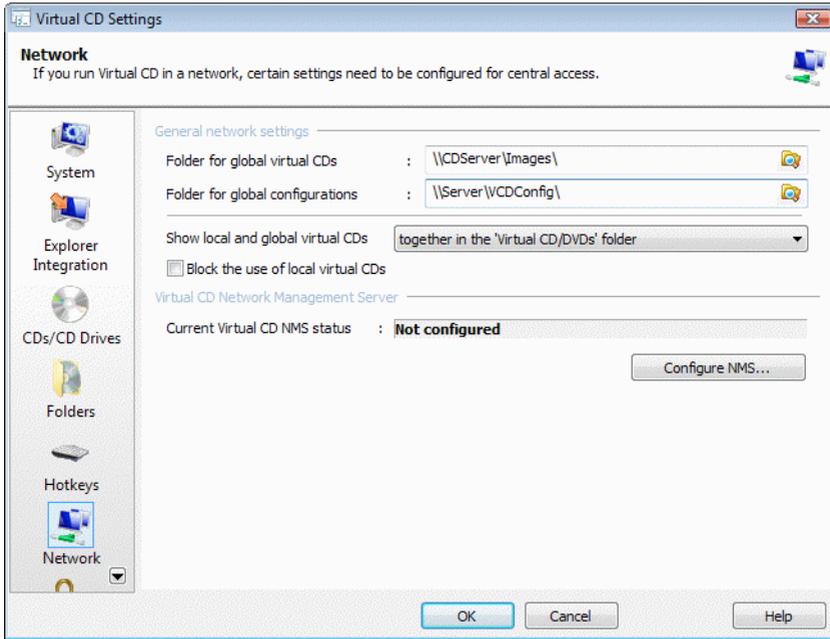
If your workstations do not all use the same operating system (e.g., some use Windows XP and some Windows 2000), make sure you do not use root shares; instead, set up a separate folder for the organizational level (\\server\share\folder). Different Windows versions have different techniques for handling root shares, which usually leads to considerable problems in the network.



If you want to use Virtual CD in a large network, we highly recommend installing the Virtual CD Network Management Server. This is a supplementary product designed specifically for networks, and enables centralized management of Virtual CD v5 through v9 workstations as well as Virtual CD v6 through v9 FS and TS server editions.

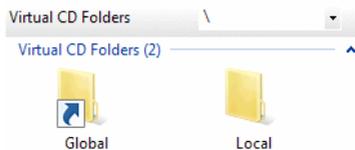
Global Configuration Path

The global configuration path is specified on each workstation, and determines which virtual CDs are displayed. All stations that use the same global configuration show the same set of virtual CDs. To specify this path, run Virtual CD Settings and open the “Network” page. Enter or select the path and save your settings.



Keep in mind that the **Folder for global virtual CDs** defines only where new global virtual CDs are created. On stations that will not be used for creating virtual CDs, this field can be left blank. Only the **Folder for global configurations** defines where global Virtual CD configuration files are stored.

If a path is defined here, the display of virtual CDs is divided into a “Local” view and a “Global” view.



In this case, where each virtual CD is displayed depends on where it is stored.

Local view: The virtual CDs shown here are accessible only on the machine that displays them in its “Local” view.

Global view: The virtual CDs shown here are available to all machines that use the same global configuration path.



All folders and virtual CDs shown in the “Global” view are marked by a small arrow in the lower left corner. This makes it easy to distinguish “Local” from “Global” virtual CDs when they are all displayed in a list rather than divided into the two “Views.”

The following configuration files determine where virtual CDs are displayed:

vcdimg.dat: Lists the virtual CDs that are included in the display, along with various properties.

vcdtree.dat: Defines the structure of the directory tree for the folders in which virtual CDs are stored.

With the default settings, these configuration files are stored under **C:\Users\Public\Virtual CDs** in the local installation. The virtual CDs shown in the “Local” view are listed here. These can be seen by everyone who uses this computer. If a global configuration path has been specified, the files defining which CDs are shown in the “Global” view are stored there.



To provide different users with access to different sets of virtual CDs, simply define each user’s configuration path accordingly. One way to do this is using the Virtual CD API.



Privileges in both of these directories are required for creating virtual CDs.



These ‘views’ define only where the virtual CDs are visible, not where they are stored. For example, if a virtual CD stored on the network is assigned to the “Local” view (using a UNC path name) and not the “Global” view, that virtual CD is available only on the computer specified. Thus, for example, you can store a virtual CD on a UNC path in the network, and then assign it to a “Local” view for testing before adding it to the “Global” view.



If you want to restrict access to some of the virtual CDs in the “global” path to a limited set of users, this can be achieved by assigning user privileges in the Windows operating system. Begin by assigning file permissions for the CDs in question to those users who should have access to these virtual CDs. Configure Virtual CD so that unregistered virtual CDs are not displayed. From this point on, the virtual CDs cannot be seen by users who do not have explicit permission to access them.



To enable management of all Virtual CD data on one machine, it is a good idea to position all folders below the global configuration path.

For example, the folders can be organized as follows:

\\server\share\VCD	This is the global configuration path, and the folder that “Global” virtual CDs are stored in
\\server\share\VCD\catalog\	Folder for catalog files
\\server\share\VCD\scripts\	Folder for scripts and jobs

Access to Virtual CD Data

In addition to the global configuration path, you can make other Virtual CD data available over the network. To do this, specify the desired settings on the **Folders** page of the Virtual CD Settings.

For example, you might want to permit access to the “new virtual CDs” and the “Quick Copy” folders **only** for those users who are permitted to create virtual CDs, while making the other folders available to all users. This can save you the trouble of distributing a lot of data individually.



In addition to the configurations available in the Virtual CD Settings program, you also have the option of specifying these folders in Client Setup programs.

Client Setup Program

When you install Virtual CD in a network, you can either install the program and configure all the settings on each client workstation separately, or you can make a **Client Setup** program. With the latter method, you only have to configure the Virtual CD settings for your client stations **once**. When you run the Client Setup on a workstation, Virtual CD is automatically installed with the settings you configured.



The **demo version** of Virtual CD does **not** include the Client Setup feature.



The demonstration given below, under “Creating a Client Setup,” includes detailed explanations of all the settings available for making Client Setup programs. Please read that section carefully before you use a Client Setup to install virtual CD on your network workstations.



If you have a Virtual CD Network Management Server, you can use a Client Setup to install Virtual CD on all your workstations from a central location, using the Client Distribution feature.

Creating a Client Setup

1

To create a Virtual CD Client Setup, select the item of the same name from the Toolbox, under **Helper programs**. This opens the **Virtual CD Configuration** program for defining your Client Setup. After the “Welcome” window, a dialog opens for **Network Management Server Configuration**.

If you use the Virtual CD Network Management Server (NMS), enter the **server name** and **port address** here. You can have the Virtual CD program retrieve a license from NMS when it runs, by activating **Retrieve Virtual CD license code from the Network Management Server**.

The screenshot shows the 'Virtual CD Configuration' dialog box with the 'Network Management Server Configuration' tab selected. The title bar reads 'Virtual CD Configuration'. Below the title bar, the text says 'Network Management Server Configuration' and 'Network Management Server connection information'. A sub-header reads: 'To operate Virtual CD with a VCD Network Management Server, enter the server name and port address for VCD NMS here.' There are two input fields: 'Server name' and 'Port address'. Below these fields is a checkbox labeled 'Retrieve Virtual CD license code from the Network Management Server'. At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

2

If you do not select this option, the next dialog prompts input of a **Virtual CD v9 license code**. Otherwise, go to Step 3.

Enter the license code that will be used whenever this Client Setup is executed.



To create a Client Setup, a license code must be either entered here or retrieved from a Virtual CD NMS. It is not possible to distribute the demo version of Virtual CD using a Client Setup.

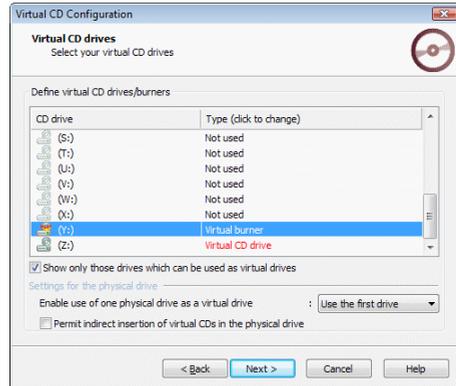
The screenshot shows the 'Virtual CD Configuration' dialog box with the 'Virtual CD v9 license code' tab selected. The title bar reads 'Virtual CD Configuration'. Below the title bar, the text says 'Virtual CD v9 license code' and 'Please enter a valid Virtual CD v9 license code.' A sub-header reads: 'Enter your Virtual CD v9 license code here.' There is one input field labeled 'Virtual CD v9 license code'. At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

3

The next dialog lets you define which drive letters will be used on the client machine for **virtual CD drives and virtual burners**. You can also define whether a **physical CD drive** can be used for running virtual CDs and, if so, which drive.



If you do not specify any drives here, the Client Setup Program will **automatically set up one virtual CD drive** using the first available drive letter.



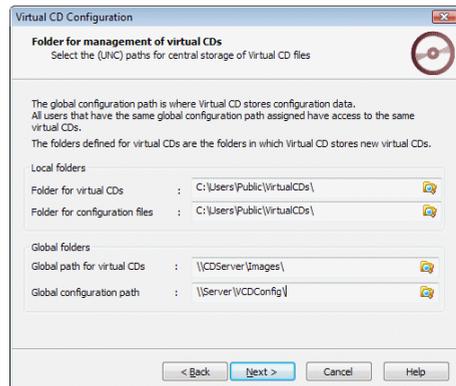
4

The next dialog prompts you to define a **Folder for management of virtual CDs**, for centralized storage of virtual CDs and other Virtual CD data.

This is where the **local and global** configuration paths are specified. These paths define which virtual CDs are shown in the local view and which in the global view. The global configuration path defines which CDs are visible for all users.



All computers that have the same global configuration path display the same set of virtual CDs in the global view.



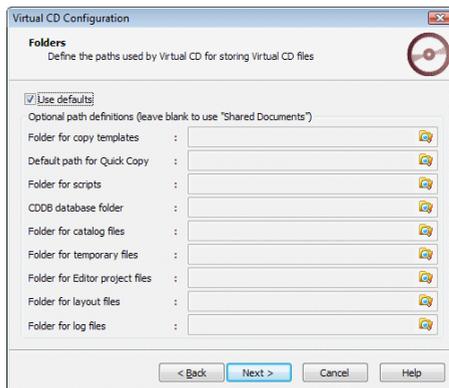
The folders defined here for **local and global virtual CDs** merely specify where the virtual CDs are stored when they are created. For users who will not be creating virtual CDs, these fields can remain blank.

5

Virtual CD lets you define all **folders** in the Client Setup that can also be defined in the Virtual CD Settings program. This means the paths to data intended for centralized use in the network can be specified directly by the Client Setup Program.



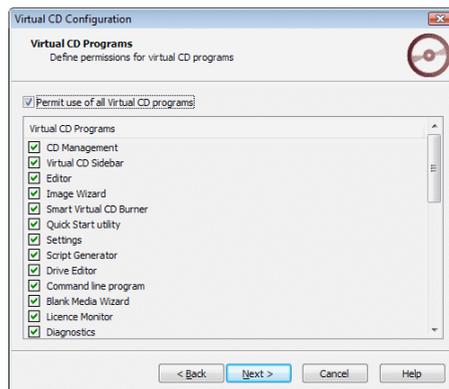
If you leave a field blank, the default path is used for the folder in question.



6

The **Virtual CD Programs** dialog lets you define which Virtual CD programs are available to the workstation user.

Unlike earlier Virtual CD versions, the Client Setup programs made with VCD v8 or later always install a **full version** of Virtual CD. Configuring this dialog page is the only way to control which Virtual CD programs can be accessed by the user when a Client Setup is used for installation. A program that is not activated here will be visible on the workstation, but an error message is shown if the user attempts to run it.



Virtual CD programs do not show controls for programs that are blocked. For example, the Toolbox displays only the functions that are permitted for use on the particular workstation.



The next dialog defines various **Functions** that affect the way Virtual CD operates on the workstation.

Open the Virtual CD sidebar automatically: Select this option to have the Virtual CD Sidebar opened automatically when Virtual CD runs.

Show default drive: The Quick Start menu and the Explorer extensions show the default drive defined for a virtual CD. This option is particularly useful if you have a virtual CD that must be inserted in a particular drive whenever it is used.

Block use of locally stored virtual CDs: Blocks access to local virtual CDs that are integrated in the local configuration path.

Hide all virtual CDs for which the files were not found: If the configuration path specifies virtual CDs that cannot be accessed, these CDs are not shown.

Block access to unregistered virtual CDs: Virtual CDs that are not specified in a configuration path cannot be used.

Eject all virtual CDs when the session is closed: When the user logs off, all virtual CDs are ejected.

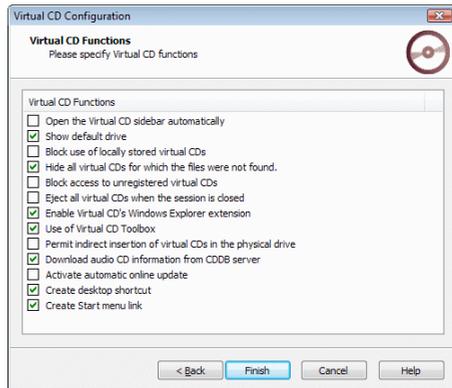
Enable Virtual CD's Windows Explorer extension: The Windows Explorer extension is activated.

Use of Virtual CD Toolbox: The Toolbox opens when the user double-clicks on the desktop shortcut for Virtual CD.

Download audio CD information from CDDB server: If you wish to permit creation of virtual CDs on the workstation, you can define whether audio CD data is automatically downloaded from the CDDB server (artist name, track titles, etc.) when a music CD is made.

Activate automatic online update: You can have Virtual CD check automatically whether a later program version is available. With this option, the check is performed automatically on all workstations installed with this Client Setup.

Create desktop shortcut: Select this option to have a desktop shortcut created on the workstation when the Client Setup runs.



Create Start menu link: This option adds Virtual CD to the list of programs shown when the Windows Start menu is opened.



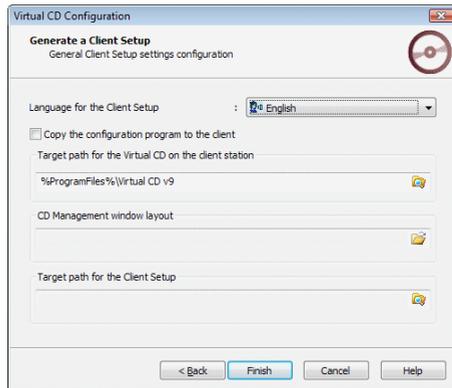
With regard to the Explorer extension and the Toolbox, the settings in this dialog have no effect if the program in question has been deactivated.



The last dialog page, **Generate a Client Setup**, defines where the Client Setup is created.

This page is where you specify the **language for the Client Setup** and the **folder in which the Client Setup is created and stored**, and define whether the configuration program for settings on the client machine is **copied to the workstation** as well.

You can also specify a **CD Management window layout** to define the display of CD Management on the workstation.



The configuration program for settings on the client station (**vc9cfg.exe**) makes it possible to change the settings that were defined here on the **Options** page. This program is stored in the Virtual CD system directory and, as a rule, should **not** be copied along with the Client Setup.



If it is necessary to change settings on the workstation after installation, the configuration program can be started using the Windows Explorer. This requires “write” privileges in the HKLM branch of the Windows Registry.

Once all settings have been configured, click on **Finish** to generate the Client Setup program.



Because a Client Setup is made up of several files, a separate folder called **v9ClientSetup** is created automatically in the path you designated for the Client Setup program. The Client Setup files are written here.

9

Once it has been generated successfully, you can use the Client Setup to install Virtual CD on your client computers. Make sure the Client Setup is in a shared directory, so that it can be accessed over the network by the client machines.

Using Multiple License Codes

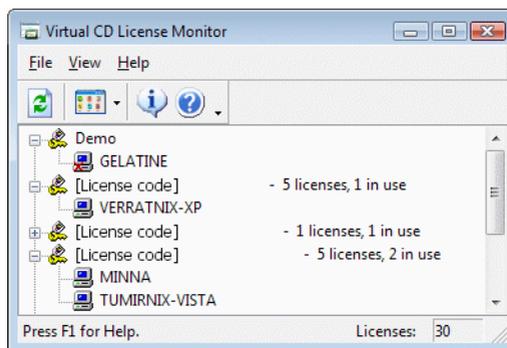
If you have more than one Virtual CD license code, you need to have them distributed throughout your system in accordance with the number of users licensed. For example, if you have two multi-user licenses for five stations each, you need to allocate one license code to five stations and another license code to five other stations.

If you use the same code to install a sixth station, an error message is shown. In this case, you can open the CD Management program and enter a license code for the workstation.



To avoid difficulties, generate one Client Setup for each license code and determine before installation which workstations will use which codes. Then run the Client Setups on the stations in accordance with your licensing plan.

If you have any problems managing your license codes, run the License Monitor from the Toolbox or from the **Help** menu in CD Management. The License Monitor shows you at a glance which license codes are in use on which machines.

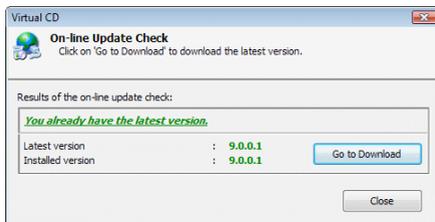


This can be particularly useful when you use Client Setups.

Troubleshooting

Stay up to date!

We are continuously developing the Virtual CD software. When a problem is reported, we address it in the subsequent update. If you have a problem with Virtual CD, please check whether you have all the updates that have been released. To do this, select **Automatic update check** in CD Management.



If you do not have the latest version, please download and install it and then check whether the problem still exists.

Questions and Answers

Virtual CD is a complex software suite that gives you a wide range of controls for working with CDs. In our effort to supply the best possible user support, we provide a number of on-line and off-line sources you can check for answers to your questions.

Documentation: The product documentation gives you an overview of the controls and functions available in Virtual CD. It includes step-by-step examples of many of the procedures used in Virtual CD, and can provide very useful tips even for the experienced user.

On-line help: The Help program describes each of the Virtual CD program modules. It also contains details that we did not have space for in the documentation.

Knowledge base: Our on-line knowledge database at <http://www.virtualcd-online.com/kbase> has the answers to a lot of frequently-asked questions. If anyone else has reported the same problem you are having, you will probably find the solution here.



Check the section called **Troubleshooting** for the questions that have been asked most frequently and their solutions.

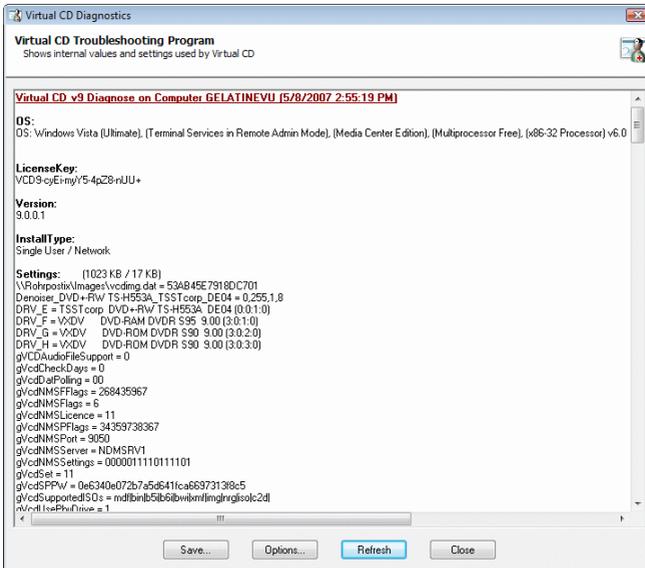
Forum: The latest issues concerning Virtual CD are discussed around the clock in the VCD users forum, at <http://www.virtualcd-online.com/support>. Here, too, you can find help with problems that have already been solved for others.

Contacting VCD Support

If you do not find an answer to your question or a solution to your problem in any of the sources listed under “Questions and Answers,” please contact our Support Department. To help us help you as quickly as possible, please observe the following as far as applicable:

1. Formulate your question as precisely as possible.
2. Describe the steps that preceded the problem.
3. Check beforehand whether the problem is reproducible.

In the process of looking for a solution to your problem, we may find that we need additional information about your system. For this reason, it is a good idea to run the VCD Diagnostics program from the **Help** menu in CD Management and include the results with your request.



The Diagnostics program detects a number of parameters relating to your system and your Virtual CD installation which can be helpful in tracking down and eliminating problems. After running the program, click **Save** to store the results in a file and send the file to our Support Department.



Please send only complete Diagnostics files. If anything is deleted from the file, you will be sent a request for a complete file, which will delay the process of solving your problem.

Troubleshooting

Frequently Asked Questions

As you can imagine, since this is the ninth version of the Virtual CD program, there are quite a number of questions that come up again and again and have already been answered.

This section of the documentation provides answers to the most frequently asked questions. For a considerably larger collection of known problems and their solutions, please refer to the Virtual CD knowledge base at <http://www.virtualcd-online.com/kbase>.

What to do if shortcut menus in the Explorer open very slowly

In some environments, opening a shortcut menu (when you right-click on an element) may at some stage start to take a lot longer than usual. This might be caused by the Virtual CD Explorer extension trying to load a very large number of virtual CD names (or the names of one or more virtual CDs that cannot be found) for use with the “Insert” option in the shortcut menu. Because Virtual CD checks the CDs before displaying them, unavailable CDs can lead to lengthy delays when loading menus and other elements. Make sure there are no virtual CDs registered in your program that cannot be accessed (for example, over network shares that are not connected).



In the Virtual CD Settings, you can switch individual Explorer extension functions on and off. Try switching off certain functions and then testing the result each time by opening a shortcut menu in your Explorer, to see whether the problem can be solved in this way.

What to do if a virtual CD doesn't work

The procedure for creating a virtual CD is pretty simple. Still, when you try to run an application from a virtual CD, it might not work. This is not unusual if the source CD uses non-standard formatting. If you make a virtual CD and then find that it doesn't work, please observe the following:

Virtual CD tries to determine the best settings for creating a virtual CD/DVD from a given source. Sometimes, however, this does not work, and it may be advisable to experiment with the options available in the **Expert Copy Mode**, and see if this results in a viable virtual CD/DVD.

If a Quick Copy file was designated for use in making the virtual CD, switch this function off before making a second attempt. If the Quick Copy file contains the source of the error, the problem will simply be recreated if you use it again.

Many CD applications require that the CD be loaded in a drive with the same drive letter that was used when the application was installed. If the application has already been installed and operated from the physical CD/DVD drive, de-install it and then install it from the **virtual CD**.

Some CD applications look for their CD/DVD in the first CD drive; i.e., the CD drive with the letter closest to the beginning of the alphabet. In such cases, inserting the virtual CD in the first physical CD drive might solve the problem.

Another possible solution is to try using a different physical drive for the source CD when making the virtual CD, since some drives cannot read all of the data on a CD.

Copying CSS-encrypted DVD videos is prohibited by law. This is why Virtual CD does not support this encryption technique.



Always remove the source CD from the physical drive before trying to run an application from a virtual CD. Otherwise, you might not be able to tell whether the application is using the physical CD or the virtual CD.



Use the **Comparison Wizard** to determine whether the virtual CD contains the same data as the physical CD.



When Virtual CD determines the optimum settings for making an image from a source CD, the results depend to a great extent on the drive in which the CD is loaded, especially if the source CD has non-standard formatting. In particular, not all CD drives can read data pertaining to CD geometry. If you are not able to make a virtual CD from a particular source CD on your computer, ask other people you know whether they have made a virtual CD from the same source CD. If so, perhaps you can obtain a Quick Copy file that you can use to make the virtual CD on your computer regardless of the capabilities of your physical CD drive.



You can use the **Add data to a virtual CD** function to add technical data, such as CD geometry data, to an existing CD. In some cases, this will preclude the necessity of making a new virtual CD.

What to do if you cannot make a virtual CD

If you are not able to make a virtual CD from a particular source CD, this may indicate that the data on the source cannot be read. This may be caused by any of the following:

The source CD drive doesn't support the techniques required for reading the data: The Image Wizard checks whether all functions required for reading the source CD are supported by the drive. If they are not, a different CD drive must be used to read the source CD.

To check which functions are supported by your CD drive, open the drive properties for the CD drive.

The CD drive in which the source CD is inserted is not displayed: Some programs open CD drives “exclusively.” This means the drive cannot be opened by another program until the first program is closed. Try closing all other programs that use CD drives and then running the Image Wizard again.

The CD “write” process has been running for several hours but has hardly made any progress: Unfortunately, this is quite common with CDs that have non-standard formatting (usually game CDs).

On some CDs, you can recognize an obviously unwritten block on the CD surface. Whenever you have a CD like this, try using the **v9 – Unreadable block copy** template included with your Virtual CD installation to make the virtual CD. This should make the reading process noticeably faster.



As a rule, any time you have a problem making a virtual CD you should try again with a different source drive, if possible. In many cases, the problem does not occur with the second drive.

What to do if you cannot play a certain virtual audio CD



With Windows Vista, CD drives can no longer be switched to analog mode. Analog mode is required for playing virtual audio CDs that have tracks stored as sound files, as opposed to normal data files. This explains why some CDs cannot be played if you are running Windows Vista.

Although the option for creating audio tracks as sound files is no longer supported in Virtual CD, you can still play your existing virtual CDs using Windows XP or earlier.

If you have problems with a virtual audio CD, the first thing you need to do is determine which type of audio tracks are on the CD. The easiest way to do this is to check the CD in the **Details** overview in the Virtual CD Management program.

If the tracks are stored as sound files, the **Compression** column shows the type of compression used; for example, **MP3**.

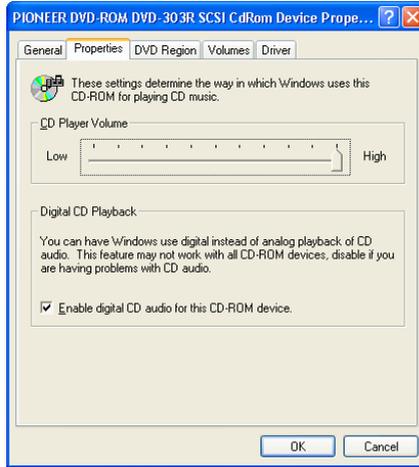
If **None** is shown in this column, the tracks are data files.

Problems playing audio tracks stored as data files:

Symptom: Once you insert the virtual audio CD in a virtual CD drive and the music player runs, an error message is generated by the Virtual CD Player (which passes the music to your CD player).

There are two possible solutions to the problem, depending on which CD player you use:

1. Some CD players cannot play virtual audio CDs as data files (i.e., play digital files) unless the **Enable digital CD audio for this CD-ROM device** option is activated in the virtual CD drive properties.



This example was generated on a computer running Window XP Professional. Please check the documentation for your operating system to find the settings for digital playback in CD drives.



This setting is not available for all devices in Windows 98. It can be activated for a CD drive only in the Multimedia settings.

2. Some CD players have their own settings which overwrite the device settings of the CD drive. With the Media Player, for example, the **Digital playback** option on the **CD Audio** dialog page must be activated.

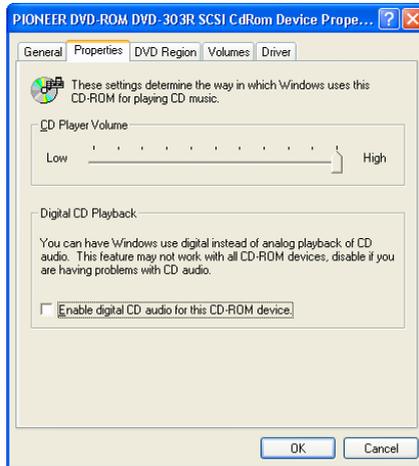


Some CD players cannot directly read and play back audio data, regardless of their device settings. For these players, the virtual music CD must be made using individual sound files rather than data files.

Problems playing audio tracks stored as sound files (analog tracks):

Symptom: The music player apparently starts when you insert the virtual CD, but no sound is produced. There are two possible solutions to the problem, depending on which CD player you use:

1. Some CD players cannot play analog tracks unless the **Enable digital CD audio for this CD-ROM device** option is deactivated on the “Properties” page for the virtual CD drive.



This example was generated on a computer running Windows XP Professional. Please check the documentation for your operating system to find the settings for digital playback in CD drives.



This setting is not available for all devices in Windows 98. It can be activated for a CD drive only in the Multimedia settings.

- Some CD players have their own settings which overwrite the device settings of the CD drive. With the Media Player, for example, the **Digital playback** option on the **CD Audio** dialog page must be deactivated.

Notes:



Support for digital playback varies from one operating system to the next. In particular, it is not highly developed under Windows 98. For this reason, we recommend using sound files (analog recording) when making virtual audio CDs in Windows 98.



We strongly advise against combining analog and digital files on a single virtual audio CD.



The Windows Media Player resets the option for digital playback (deactivates it) automatically. Thus every time you want to play an audio CD with digital music tracks, you have to set this option again yourself.

What to do if one of your programs no longer detects your CD recording drive

In some rare cases, CD-recording applications can no longer detect the CD recorder after Virtual CD has been installed. In the instances that have been investigated to date, this was not caused by a problem with Virtual CD, but rather by a problem with the CD-recording function implemented in the application in question. Specifically, the CD-recording function was found to be incapable of reading data correctly from the physical CD-recorder in systems that have a large number of CD drives or burners.

Since the problem is not caused by the Virtual CD program, it cannot be solved by modifying Virtual CD settings. In most cases, however, the application was able to detect the CD recorder again after the number of virtual CD drives was reduced to one.



We would like to point out once again that, contrary to claims made by support staff and on Web sites of the applications in question, this problem has not been caused to date by the Virtual CD program, but in every instance has resulted from a problem with the CD-recording function in the application that fails to detect the CD recorder. This is clearly demonstrated by the fact that the same problem has been reproduced by connecting a large number of physical CD drives in a system in which Virtual CD had **never** been installed.

Driver Problems

There is a broad variety of difficulties that may, in certain instances, arise in connection with the Virtual CD driver. The following are the most common of these problems:

No virtual CD drives are set up: There is no all-purpose solution to this problem. When it occurs, the computer in question is often a machine on which a large number of programs that use CD drives have been installed and then removed again. Sometimes a de-installation process is incomplete, and leaves behind fragments of code that interfere with virtual CD drive setup.

Following installation, an application cannot find any physical CD drives: This kind of problem often occurs with applications that cannot run in conjunction with more than one controller. Once you install Virtual CD, you have at least two controllers in your system – one for your physical CD hardware, and one for your virtual drives.

There are no generally applicable solutions for driver problems. In many cases, however, it can help to deinstall and then reinstall Virtual CD.

If you have other programs that use CD drives, try deinstalling those too and then reinstalling them after re-installing Virtual CD.



To eliminate as many problems as possible and ensure the greatest possible compatibility, we have tested the software extensively here at H+H. It is also certified by Microsoft for use with the Windows XP and Windows Vista operating systems.

Questions on Network Operation

The following are the two issues most commonly raised with regard to using Virtual CD in a network:

No more than 10 users can access a single virtual CD simultaneously: This limitation is **not** imposed by Virtual CD, but rather by Microsoft. While it is true that Windows NT/2000/2003 Server edition and Windows NT Workstation/2000/XP Professional can be used as file servers, simultaneous access to an NT-based **workstation** is nonetheless limited to **10 users**. This applies both to virtual CDs and to global configuration files.

Virtual CDs are not displayed in CD Management: Make sure you are connected to the network drive (or other medium) on which your virtual CDs are stored. If you are not, then establishing the connection should solve the problem. Another explanation, however, may be that the user who cannot see the virtual CDs does not have the privileges required for access to the files concerned. Changing the relevant permissions should solve the problem.

General Information

In addition to questions that specifically have to do with Virtual CD, there are a couple of more general topics that are often addressed in the same context:

A hotkey defined in Virtual CD does not work (or not in all programs): Check whether the combination of keys chosen for this keyboard shortcut is already in use by another program for a different function. If it is, then you need to pick a different key combination for one of the two programs.

Activating the option to suppress the autoplay function on a virtual CD doesn't have any effect: Suppression of the autoplay function is not handled in the same manner by all operating systems. Windows XP is the first Windows version to provide true support for this control. The support provided in earlier versions is rudimentary at best. Thus we cannot guarantee that Virtual CD will be able to suppress the autoplay function in every case.

In some instances, suppression of the autoplay function may fail when multiple CDs are inserted simultaneously (e.g., by a script). If each individual program call is not passed correctly by the operating system, the suppression function might fail.

Glossary

A

AES-256:	Name of data encryption technique used for optimum encoding virtual CDs.
Audio CD:	CDs with this format contain audio tracks only (no data tracks).
Audio track:	The data stored on a CD is divided into tracks. On a music CD, the individual tracks are referred to as audio tracks.
Autoplay:	The autoplay function is available for Windows XP and later. If the inserted CD or DVD has an autorun function defined in its root directory, autoplay executes that function. If not, the autoplay function opens a dialog showing a list of programs that can be used to run the type of file stored on the inserted medium.
Autorun:	The autorun function as defined here refers to the autorun.inf file stored in the root directory of some CDs and DVDs. This file contains instructions for the action to be performed automatically on insertion of the removable media.

B

Blu-Ray:	DVD successor technology.
-----------------	---------------------------

C

Caching:	With the Virtual CD Editor, you can create customized audio CDs with tracks from a number of different source CDs. The tracks you choose are cached so you can add songs from a number of different CDs while composing your custom CD, but do not have to insert each CD again once the writing process starts.
CD-Extra:	This CD format has two separate sessions, one containing audio tracks and one with data.

CD-Text:	This is a format for an audio CD with additional information about the album, artist and songs. To make use of the text data, you need a text-capable music player.
CDDA:	This stands for “CD Digital Audio,” the format used for music CDs.
CDDB:	CDDB is a free database service offered at FreeDB.org. You (or your Virtual CD program) can request data (artist, track titles, etc.) pertaining to audio CDs from this service over the Internet.
Client Setup:	This is a Setup program that you configure, for installing Virtual CD on your network stations.
Convert:	You can convert ISO-compliant images into virtual CDs. This is necessary if you want to have all the functions available for an ISO image that you can use with virtual CDs.
Copy template:	Files in which frequently-used sets of Image Writer configurations are stored.
“Create and insert...” command:	A command for creating a blank virtual medium and then having it automatically inserted in the virtual CD burner upon completion.
CSS:	“Content Scrambling System,” a technique used to prevent video DVDs from being copied.

D

Data file:	When you make a 1-to-1 copy of a CD with Virtual CD, the CD data is stored in the form of data files.
Data track:	The data stored on a CD is divided into tracks. Tracks that contain data, as opposed to music, are referred to as data tracks.
DVD:	“Digital Versatile Disc,” the most commonly used medium for videos today. In addition to “DVD Video,” there are also “DVD Audio” and “DVD-ROM” (data) formats.

G

- Global configuration path:** If you designate a directory for this path, you can distribute access to virtual CDs over the network. This gives you the option of dividing each workstation display into to “locally” and “globally” accessible CDs.
- Global view:** The “Global view” shows all CDs that are indicated in the -->Global configuration file. The designation “Local” does not necessarily mean the CDs are stored on the computer on which they are displayed; it refers only to accessibility.

H

- HD DVD:** DVD successor technology.

I

- Indirect insertion:** Insertion of a virtual CD in the first available drive, as opposed to insertion in an explicitly specified drive.
- ISO:** A standardized file system that is mostly used on CDs.
- ISO blank:** Virtual blank medium on which data is written in ISO format when the medium is recorded.

J

- Job task:** One of the tasks defined in a --> Virtual CD job

K

- Known virtual CDs:** Virtual CDs that are visible in your CD Management program. If you have virtual CDs that are not shown, you can run the CD Search function to add them, if desired.

L

Local view: The “Local view” shows virtual CDs that are available only on the local computer where they are displayed. The designation “Local” does not necessarily mean the CDs are stored on the computer on which they are displayed; it refers only to accessibility.

M

Mixed-mode CD: “Mixed Mode” is a CD format that includes both a data track and a number of audio tracks. This format is often used for games.

Multisession CD: A CD containing multiple sessions (see “Session”)

N

Non-standard formatting: If a CD is not made in accordance with the specified industry standards, this is referred to as a CD with non-standard formatting.

Q

Quick Copy file: A Quick Copy file stores data relating to problematic features of the source CD (such as unreadable sectors) and accelerates the process the next time this CD is used as a source. Each Quick Copy file is unambiguously associated with the source CD for which it was made.

Quick Start menu: The menu that opens when you right-click on the Quick Start icon in the taskbar.

R

RAW sector: Sectors in data tracks contain both the user data they are meant to convey, and additional information that makes sure the user data is correct. When “Read raw sectors” is activated, the entire sector is read.

Registered virtual CDs: Virtual CDs that are visible in your CD Management program. If you have virtual CDs that are not shown, you can run the CD Search function to add them, if desired.

S

- Sector:** The smallest unit of organization of data on CDs and DVDs.
- Session:** Closed segment of a CD. Data CDs usually have one session. If you write data on a CD-R more than once, this is a multisession CD. When the CD is inserted, the most recent session is shown.
- Smart Virtual CD:** Smart Virtual CD technology makes it possible to burn multiple virtual CDs on a single blank CD/DVD. When you include the Smart Virtual CD Reader Packet on the CD you burn, the virtual CDs it contains can be run on any computer, regardless of whether the Virtual CD program is installed or not.
- Smart Virtual CD drive:** A USB flash drive that contains Smart Virtual CD technology for running virtual CDs on other computers.
- Snapshot:** A function that lets you store information indicating which virtual CDs are in which drives, and load this information with a single mouse-click to recreate this state at any time.
- Sound files:** With Virtual CD v8 and earlier versions, you had the option of recording audio tracks on music CDs as sound files on a virtual CD. Because Windows VISTA does not support playing virtual CDs with sound files, this option is no longer available in version 9.
- Sub-channel data:** Data on a CD that is not part of the user data. For example, the textual information on a "CD-Text" CD is stored in the sub-channel range.

V

VC4:	File name extension for virtual CDs made with version 4 or later of the Virtual CD program.
VC6:	File name extension for virtual CDs made with version 6 of the Virtual CD program. This file name extension is only used for virtual CDs that are created using features (such as encryption) that are not supported by earlier program versions.
VC8:	File name extension for virtual CDs made with version 8 or later of the Virtual CD program. This file name extension is used only for virtual blank media.
VCX:	File name extension for “definition files” used by the Virtual CD Editor to store structural data about a customized virtual CD.
Virtual blank:	Blank virtual medium for use with the virtual CD burner.
Virtual burner:	Emulated DVD-RAM burner which behaves like a physical burner, and looks the same as a physical burner in Windows Explorer.
Virtual CD:	Image of a physical CD; stored on the hard disk.
Virtual CD drive:	Emulated CD drive; behaves like a physical drive and is displayed in the same manner in the Windows Explorer.
Virtual CD job:	Job files control background processing of multiple tasks, as defined in the Job Editor.
VJOB:	File name extension of Virtual CD job files.
VPS:	File name extension for copy templates.
VQC:	File name extension for Quick Copy files.
VQC files:	Quick Copy files; created by the Image Writer at the same time a particular virtual CD was made.

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