

AVS DVD Copy Program Help

www.avsmedia.com

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Overview

AVS DVD Copy is a compact and fully functional application that lets the user copy, clone or compile own CDs, DVDs and new generation Blu-Ray discs. It also supports shrinking DVD video to let the user backup a double layer video DVD onto one single layer DVD±R/RW and burning previously saved ISO images onto different types of optical discs. The software has a very easy-to-use and understandable interface that lets you create your own data and video discs effortlessly in just several mouse clicks.

AVS DVD Copy supports writing to the following disc types: CD-R, CD-RW, CD-RW High Speed, DVD-R, DVD-RW, DVD+R DL, DVD-RAM, D-R, BD-RE, BD DoubleLayer-R, BD DoubleLayer-RE. See the Appendix section for more detail on different disc types.

System Requirements

- Windows 2000/XP/2003/Vista operating system (all of the last updates installed are recommended);
- Pentium III 800 MHz or higher;
- 128 MB RAM;
- CD-RW, DVD-ROM/CD-RW combo drive, DVD-R/RW/DL, DVD+R/RW/DL, DVD-RAM, BD-R/RE drive with 1394, USB2.0, ATAPI, SCSI, or CardBus interface;
- At least 10 megabytes of free hard disk space; up to 200 Gb to create an ISO-image of a six-layer Blu-Ray disc;
- Enabling the DMA mode is recommended for proper use;
- Administrative privileges are required for installation.

Contact Us

If you have any comments, suggestions or questions regarding AVS DVD Copy or if you have a new feature that you think could be added to improve our product, please feel free to contact us.

General information	info@avsmedia.com
Technical support	support@avsmedia.com
Sales	sales@avsmedia.com

If you do not receive an answer to your question within 24 hours, please feel free to submit your question via support form . Unfortunately some messages may be rejected by our mail server as spam or as ones that contain viruses.

Technical Support

AVS DVD Copy software does not require any professional knowledge. If you experience any problem or have a question, please refer to the program help. If you cannot find the solution, please contact our support staff.

AVS Media staff provides several forms of automated customer support:

- **Web Site Support**
Please visit our website (www.avsmedia.com) to explore the extensive customer support information on AVS DVD Copy . Check our updates of Frequently Asked Questions and How To section.
- **E-mail Support**
You can submit your technical questions and problems via e-mail to support@avsmedia.com . Please note that for more effective and quick resolving of the difficulties we will need the following information.
 - System parameters (CPU, hard drive space available, etc.)
 - Operating System
 - The information about the DVD drives installed on your computer (manufacturer and model)
 - Detailed step by step description of your action

Please do NOT attach any other files to your e-mail message unless specifically requested by AVS Media support staff.

If you do not receive an answer to your question within 24 hours, please feel free to submit your question via support form . Unfortunately some messages may be rejected by our mail server as spam or as ones, which contain viruses.

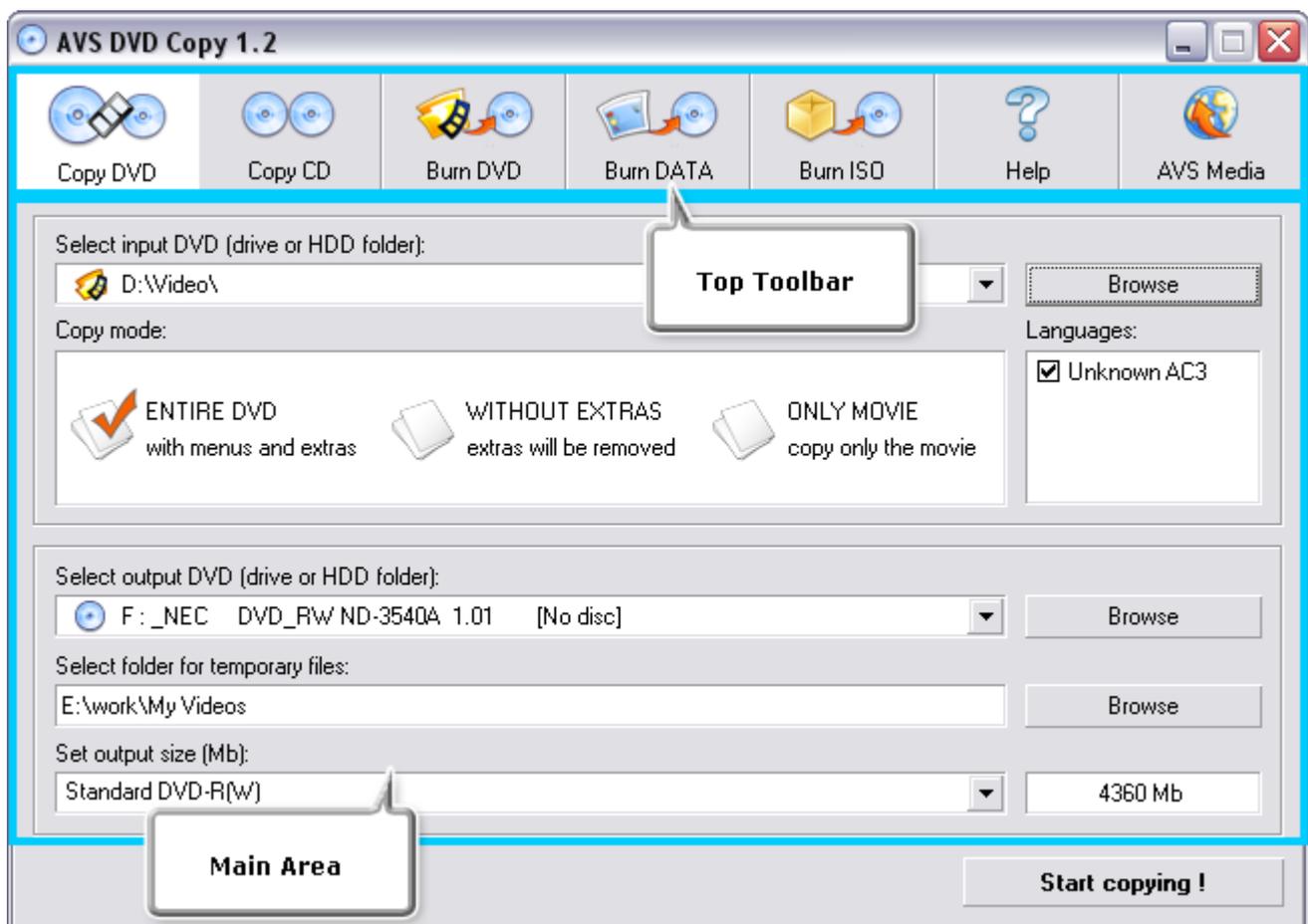
Program Interface

Main Window

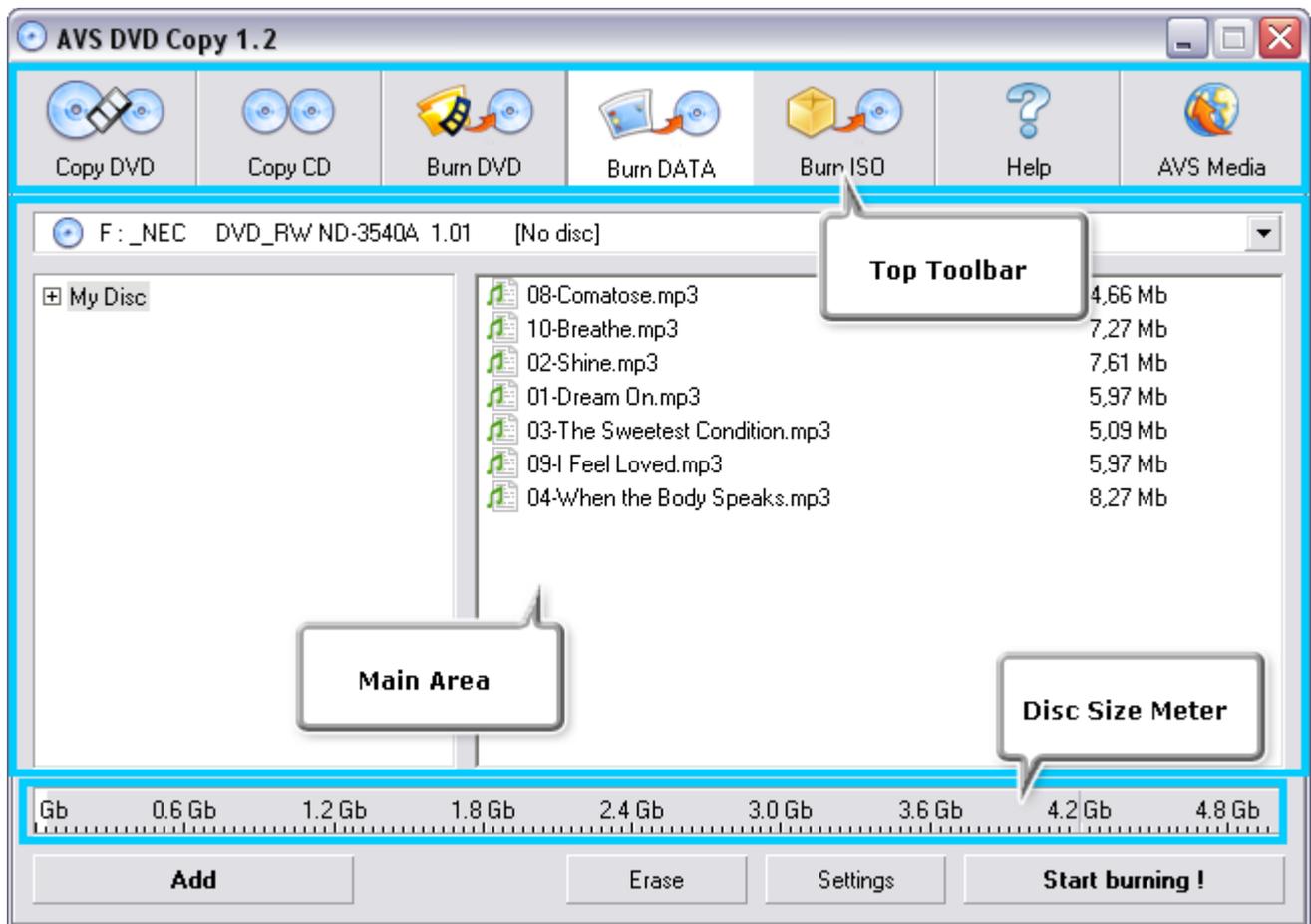
AVS DVD Copy has a simple intuitive interface that is easy to understand and very easy to use. When you launch the application you will see the Main Window where the basic controls of the program are placed.

AVS DVD Copy Main Window consists of the following principal parts:

- Top Toolbar - the toolbar with the main action buttons that let the user select the work mode of the AVS DVD Copy program.



- Main Area - the central part of the AVS DVD Copy program window that lets the user select the main burning parameters or add files. Note, that the Main Area looks different depending on the work mode of the program.
- Disc size meter - the panel that shows the size of the most common disc media types and the size of the data that is going to be written onto the disc. It is available in the Burn DVD , Burn DATA and Burn ISO work modes.



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Top Toolbar

The Top Toolbar consists of the action buttons that can be used to select the work mode of the AVS DVD Copy program. You should use the appropriate buttons depending on the task you are going to perform:



Button	Description
 Copy DVD	Use this button to copy your input DVD video onto a disc or your computer hard disk drive folder with the size selected in the box in the lower part of the main area. The DVD video will be remastered if needed to fit the selected disc size. You can also cut out all the unnecessary languages, menus and extras present on the DVD.
 Copy CD	Use this button to get an exact copy of the input CD or DVD onto the other disc. No compression will be used to record the files onto the target disc, so you should bear in mind that it is necessary to use the same disc type and capacity for the recording to be performed correctly.
 Burn DVD	Use this button to burn your DVD video files onto a disc so that it become readable on your home hardware or software DVD player. You can also create an ISO image of the DVD video disc, so that you could burn it later onto a disc if you do not have such a possibility right now.
 Burn DATA	Use this button to burn any kind of data onto a CD/DVD/BD disc. You can also create an ISO image of the disc you would like to record, so that you could burn it later onto a disc if you do not have such a possibility right now.
 Burn ISO	Use this button to burn a previously created ISO image onto a CD/DVD/BD disc.
 Help	Use this button to open this program help.
 AVS Media	Use this button to visit the AVS Media web site on the Internet.

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Program Interface

Main Area

The Main Area is the central part of the AVS DVD Copy program window that lets the user select the main burning parameters or add files. It looks different depending on the program work mode. For instance, for the Copy DVD work mode it will look the following way:



Here one can select the Source and Target drive or HDD folder, Copy mode for the DVD, check or uncheck the Languages that will be included into the output DVD, set the folder for the temporary files and the target DVD size. See the Copy DVD section for more on all these parameters.

If you select Burn DVD , Burn DATA or Burn ISO work mode, the Main Area will look the following way:



Here you can select the target disc drive or ISO-image to record your data to (please, note, that using ISO-image as target is disabled in Burn ISO work mode) and the files to record to your compilation. You can use the buttons below to add files, ISO-images or folders, erase the inserted disc, set the

burning parameters and start disc burning or ISO-image creation . Please see the respective chapters for more details on these actions.

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Disc Size Meter

Disc Size Meter is available in the Burn DVD , Burn DATA and Burn ISO work modes. It shows the size of the current disc inserted into the CD/DVD/BD drive and the size of the data that is going to be written onto the disc. Thus, depending on the disc type and its capacity the Disc Size Meter will look differently for a CD , DVD Single Layer or DVD Double Layer and Blu-Ray discs of different capacities.

For instance, for a Double Layer Blu-Ray disc it will look like this:



For a DVD Single Layer it will look like this:



For a CD the Disc Size Meter appearance will change like this:



The Marker shows the standard capacity of a CD-R or a CD-RW - about 700 Megabytes.

When you add data to your compilation the Disc Size Meter will show whether your added data is going to fit your CD/DVD/BD or if it exceeds its capacity.

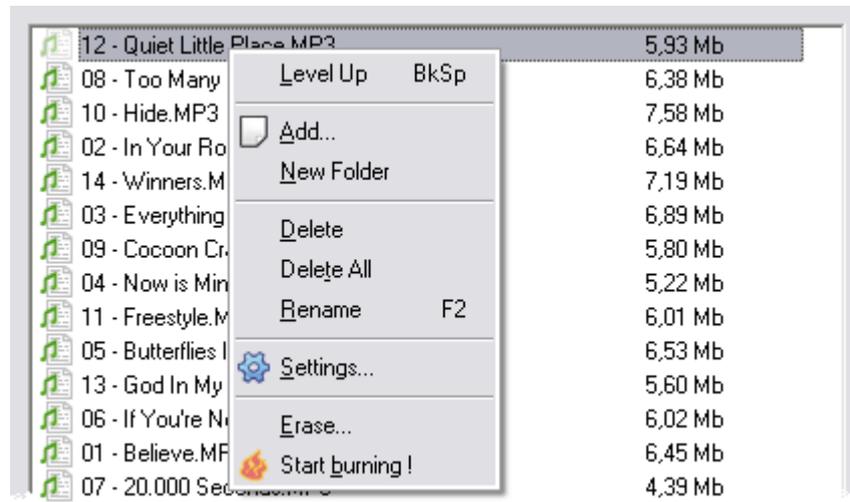


If the data size is greater than the capacity of a CD/DVD/BD you should either split your data into parts and record these parts onto several CDs/DVDs/BDs or select another disc type with a larger capacity. See the Appendix section for more information on different disc types.

Program Interface

Express Menu

The Express Menu is used to facilitate access to the main features of the AVS DVD Copy . It can be activated clicking the right mouse button within the Main Area of the program in the Burn DVD , Burn DATA and Burn ISO work modes:



Item	Description
Level Up	Use this option to go to a level that is parent to the current one.
Add... (DVD, ISO)	Use this option to add more files, DVD video or ISO-image to your compilation.
New Folder	Use this option to create a new folder in your compilation list.
Delete	Use this option to remove the selected files or folders from the compilation list.
Delete All	Use this option to remove all the files and folders and clear the compilation list.
Rename	Use this option to change the names of files and folders in your compilation list.
Settings	Use this option to open the Settings window and change the burning parameters.
Erase	Use this option to erase the disc in the optical disc drive.
Start burning!	Use this option to start burning the created compilation.

Overview

The main work modes of the AVS DVD Copy are:

1. Copy DVD - use this mode to copy video DVD from one disc to another. The source disc will be analyzed and, if you would like to copy from a greater size disc to a smaller size one, recompressed to fit the target size. You can also remove unwanted languages, menus and extras, if needed.
2. Copy CD - use this mode to create exact copies of DVDs, CDs and BDs. No data will be changed, so you will need to use the identical disc types for both source and target.
3. Burn Discs - use these modes to record different type of files onto CDs, DVDs and BDs. You can record DVD video (Burn DVD), all kind of data (Burn DATA) and ISO-images (Burn ISO) onto your target disc.

Overview

Copy DVD work mode is used to copy video DVDs and recompress the DVD video recorded on double-layer media to fit single-layer discs.

The work with the Copy DVD mode is quite easy. It can be done in several steps:

1. Select the Source and the Target DVD drive (or hard disk drive folder, if you have your DVD video on your computer HDD). You might also need to select the folder for the temporary files. If you copy a DVD having only one disc drive, a temporary image on your computer HDD will be created to let you record the resulting disc using the same disc drive. In this case please make sure that you have enough free hard drive disk space available for the created temporary disc image. Its size could be up to almost 9 gigabytes for a double-layer DVD. You should also set the target disc size in the appropriate box.
2. Select the Copy mode . You can either copy the entire DVD with all the menus and extras, or copy the DVD retaining its structure and menus but removing all the extras, or copy only the main movie.
3. Select the necessary Languages and audio streams and remove the unwanted or unneeded ones. This can enhance the quality of the output video.
4. When all the settings are selected, press the Start copying! button to begin the DVD copying process. Its progress will be shown on the progress bar:



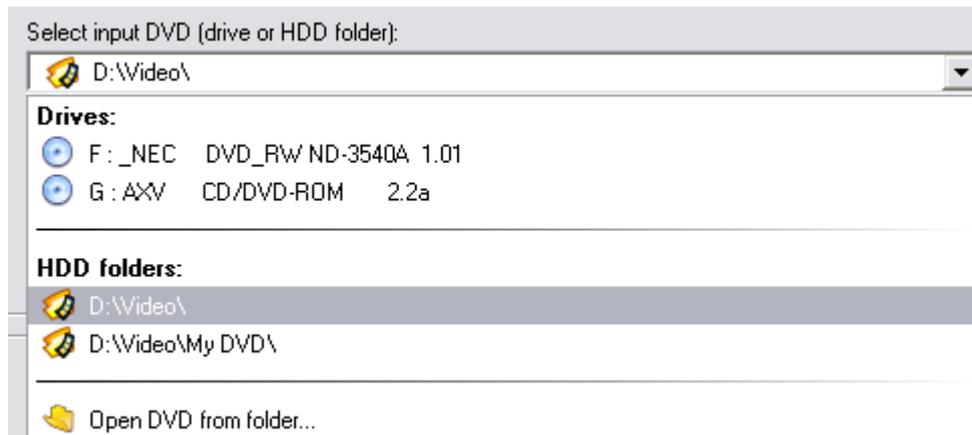
Note
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- in case the source and destination disc drives coincide, the process will be stopped after the Shrinking source DVD phase, and the program will wait for you to insert the DVD±R(W) disc so that the copying could be continued.
- if you save the output DVD video onto your computer hard disk drive, the copying process will consist of Opening source DVD and Shrinking source DVD phases only.

Source and Target

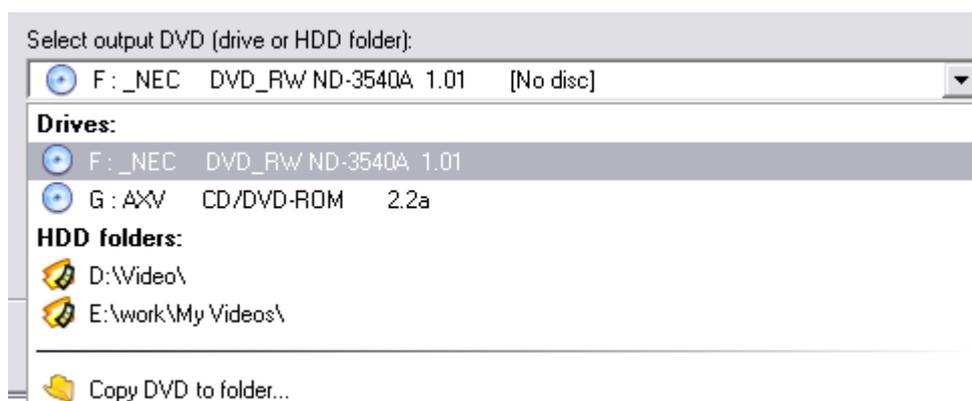
To start burning the discs you will need to select source and target drives.

- Source (input) drive - the optical disc drive or a hard disk drive folder used to read the information from. It can be either DVD video disc or hard drive folder containing DVD video files. It can be selected from the drop-down list:



In this list you can see:

- Drives - the list of all the optical disc drives that are present on your personal computer (including virtual drives);
 - HDD folders - the list of three most recently opened hard disk drive folders, containing DVD video files;
 - Open DVD from folder - select this option to open the standard explorer window and choose the folder on your computer hard disk that contains DVD video files.
- Target (output, destination) drive - the optical disc drive or a hard disk drive folder used to record the information to. It can be either a recordable (rewritable) optical disc or hard drive folder. As well as the source it can be selected from the drop-down list:



In this list you can see:

- Drives - the list of all the optical disc drives that are present on your personal computer (including virtual drives);
- HDD folders - the list of three hard disk drive folders most recently used to save your files to;
- Copy DVD to folder - select this option to open the standard explorer window and

choose the folder on your computer hard disk to save the files to.

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Copy Modes

There are three main modes used to copy a video DVD onto the other one:

- [Copy the entire DVD](#)
- [Copy DVD without extras](#)
- [Copy only main movie](#)

Button	Description
ENTIRE DVD with menus and extras	Use this button to copy the source DVD with all its structure - main movie, menus and extras - onto the other DVD. If the size of the source DVD is bigger than that of the target DVD, the video will be recompressed retaining the structure of the original DVD.
WITHOUT EXTRAS extras will be removed	Use this button to copy the source DVD and its structure onto the other DVD. Although the structure will be retained, the extras will be removed and will become unavailable from the DVD menu. At the same time this can enhance the main movie quality in case the recompression is needed as sometimes extras occupy quite a considerable part of the video DVD.
ONLY MOVIE copy only the movie	Use this button to copy only the main DVD movie onto the target DVD. The DVD will be remastered and all the menus and extras will be removed in order to prevent the movie from being too much compressed. It is very helpful if you prefer to have the main movie in a better quality and would like to get rid of the extras or if the extras contain commercials and trailers mainly.

The selected mode will be marked with the  sign.

Depending on your needs and the input and the output disc size you can select the mode that will suit better. For instance, if you would like to save a DVD-9 onto one DVD-5 disc, you will need to recompress it so that it could fit the lesser capacity disc. If you do not need all the menus and extra materials from the input disc, you can use the ONLY MOVIE mode to record the main movie only and delete all the other materials to keep the quality better.

If you want to retain the disc structure (it can be helpful if the disc contains the deleted scenes from the original movie or the director's cut that can only be selected from the DVD menu), you will need to select the second mode - WITHOUT EXTRAS .

And finally, if all of the disc contents are important to you, you should select the ENTIRE DVD mode to preserve the original DVD structure and contents.

Note : you can remove the unnecessary Languages in all the modes, thus enhancing the quality of the output video.

Language Selection

It often happens so that the source DVD contains more than one language. It is very useful when you can speak these languages or learn them. But if you do not need them, they can be easily removed. Moreover, if you compress the source DVD to fit the target disc, removing the unneeded languages can help avoid stronger compression of the video, thus enhancing the quality of the output video.



When the disc or a hard disk drive folder is opened, all the available languages for this DVD video can be found in the Languages window. You can either check all of them or uncheck the languages you consider unnecessary.

Note : there can be not only other languages but also audio variants of one language that differ in the number of channels and audio codec used to record them. It is usually done so that the DVD could be better played on different hardware or software players. If you are sure, what track is best played by your DVD player, you can leave only this track on the target DVD and uncheck all the other audio tracks.

Setting DVD Drive Region Code

Region code - the software protection used on DVD discs to prevent unauthorized playback and duplication of the discs made in one country to be played in another country.

Motion picture studios want to control the home release of movies in different countries because theater releases aren't simultaneous. They have required that the DVD standard include codes that can be used to prevent playback of certain discs in certain geographical regions. Each player is given a code for the region in which it's sold. The player will refuse to play discs that are not allowed in that region.

Most DVD-ROM drives let you change the region code a few times, usually between 0 and 5. Once a drive has reached the limit it can't be changed again unless the vendor or manufacturer resets the drive. This limitation cannot be overridden.

There are 6 main regions: (1) Canada, U.S., US Territories; (2) Europe, Japan, South Africa, Middle East (including Egypt); (3) Southeast Asia, East Asia (including Hong Kong); (4) Australia, New Zealand, Pacific Islands, Central America, Mexico, South America, Caribbean; (5) Former Soviet Union, Indian Subcontinent, Africa (also North Korea, Mongolia) and (6) China.

Before you can start copying your DVD, you will need to set up your DVD drive region code so that it would coincide with the disc region code. In case they differ the following window will appear that will let you set the drive region:



If you have several DVD drives on your computer, you might try and insert the disc into the other drive that could have the region code matching the region code of the disc. If you still need to change the code of your drive, you should bear in mind, that this will decrease the number of the drive region changes left. When you change the drive region a certain number of times, you will not be able to

change it again using any software means, even reinstalling Windows or taking the drive to another computer.

To set the new drive code press Yes , to leave it unchanged select No . Please note, that you will not be able to copy the DVD if you choose to leave the drive region unchanged.

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Copying DVD-9

It happens quite often that you need to backup your double-layer DVD (so called DVD-9) onto one single layer DVD (known as DVD-5). As a matter of fact, you will need to recompress it so that it could fit the lesser capacity disc. The quality of the video could deteriorate in this case, so you will need to decide what you need more - the best available quality or all the materials on the disc. There is one more way out: you can take a double-layer DVD to record the video onto it, and the program will suggest such an option:



You will see the disc full size in the upper part of the window and will have two options:

- Use a standard DVD - use this option to reconvert the input DVD and shrink it so that it will fit the output DVD-5 . It is recommended to use this option if your DVD-drive does not support writing onto double-layer DVDs or if you do not have a double-layer DVD available. See below to find out how you can improve the output video quality if you record onto a standard DVD.
- Use a double-layer DVD - use this option if you have a possibility to record the input DVD onto a double-layer output DVD. The disc will be simply copied without any recompression and thus any quality loss.

Some tips when copying DVD-9 onto a single DVD-5 :

- If you do not need all the menus and extras from the input disc, you can use the ONLY MOVIE mode to record the main movie only and delete all the other materials to keep the quality better.
- If you want to retain the disc structure (it can be helpful if the disc contains the deleted scenes from the original movie or the director's cut that can only be selected from the DVD menu), you will need to select the second mode - WITHOUT EXTRAS .
- And finally, if all of the disc contents are important to you, you should select the ENTIRE DVD mode to preserve the original DVD structure and contents.

Note : you can remove the unnecessary Languages in all the modes, thus enhancing the quality of the output video.

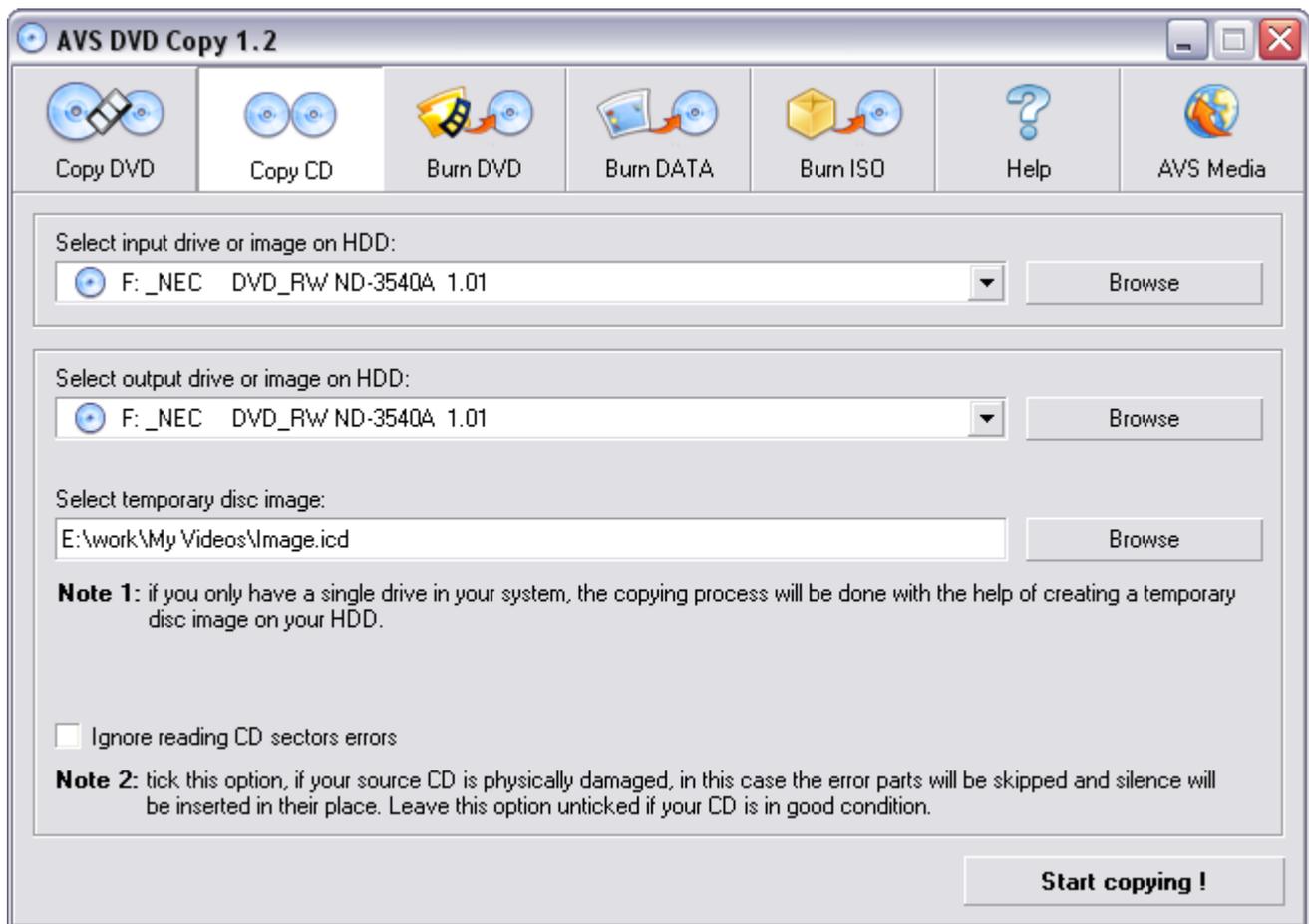
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Overview

Copy CD work mode is used to create an exact copy of the source disc. No data will be changed and no video will be compressed on the target disc as compared to the source disc.

Select the source drive that you are going to copy from. Please note that in the source drive drop-down combo box a path to any previously created image located at your hard drive could be specified. After that you should set the destination drive, which also could be a CD/DVD/BD-drive as well as an image at your hard drive. In case your destination drive is HDD, AVS DVD Copy will let you select the destination folder using the common windows explorer.

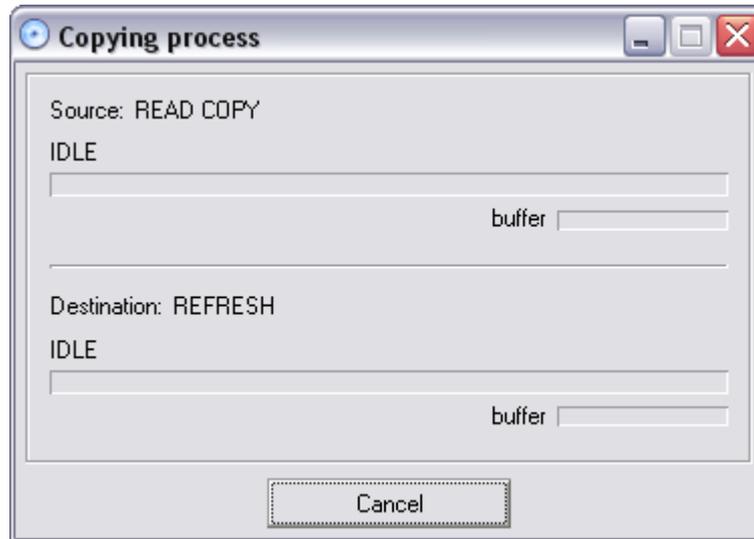


If you clone a CD/DVD/BD having only one disc drive, a temporary image on your computer HDD will be created to let you record the resulting disc using the same disc drive. In this case please make sure that you have enough free hard drive disk space available for the created temporary disc image. Its size could be up to almost 200 gigabytes for a six-layer BD.

The option Ignore reading CD sectors errors lets you copy damaged discs. In case you know that your disc is physically damaged (scratched, for instance) the program will still let you copy such a disc, replacing the defective areas with zero bytes. Thus the disc will become readable again, though some of the information might be lost.

Copying Discs

After you select all the settings click the Start copying! button to start the copying process. You will see the progress of the current operation and the buffer state at the moment:



You can click the Cancel button to abort the recording, although it is not recommended to do that during the burning to the destination disc as the disc might become unreadable afterwards if the burning process is not complete. You won't be able to read or write a CD-R, a DVD-R or a BD-R after you press this button in the middle of the burning process.

Overview

The Burn Discs work modes include three types of work depending on what type of data you are going to burn:

1. **Burn DVD** - use this mode to record DVD video discs if you have video files that compose the DVD structure (files with .vob , .ifo and .bup extensions) on your computer hard disk drive. As a result of adding these files a DVD video disc will be recorded that will be compatible with your software or hardware DVD player. (Please read your hardware DVD player manual to make sure it supports DVD±R/RW discs so that it could read them after burning.)
2. **Burn DATA** - use this mode to record different type of data to CD, DVD or BD discs.
3. **Burn ISO** - use this mode to record onto a CD, a DVD or a BD ISO-images you already have on your computer hard disk drive. The program will add the files that the ISO-image contains to your compilation. See the Working with Images section for more detail.

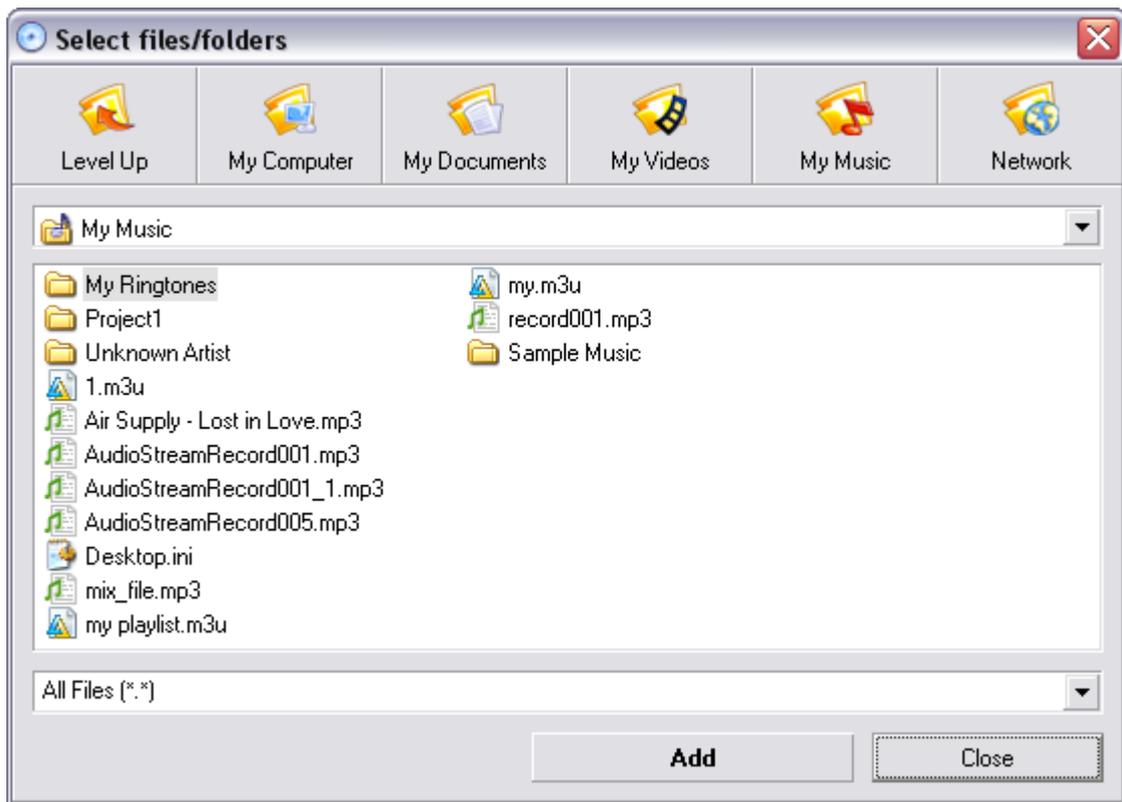
Using all the Burn Discs modes is similar to each other and comprise the following steps:

- Select the Burn Discs mode - Burn DVD , Burn DATA or Burn ISO - depending on the data type that you are going to burn.
- Select the target drive - optical disc or computer hard drive (when recording ISO-image).
- Add the files to your compilation - DVD video files when in the Burn DVD mode, ISO-image when in the Burn ISO mode and any data type when Burn DATA mode. Use the Add button for that.
- Adjust the burning settings for your compilation clicking the Settings button.
- Erase the disc if it is not empty using the Erase button. Note, that this step can be skipped as the program will offer you to erase the non-empty disc before the burning starts.
- Click the Start burning! button to begin the recording or image creation process.

Adding Files

Before you start burning your discs you should compile a list of all the files you would like to record onto your disc.

To do that use the Add button or the Express Menu , clicking with the right mouse button within the File list area and selecting Add... The window will open that will let you navigate through your personal computer drives and find the necessary files and folders:



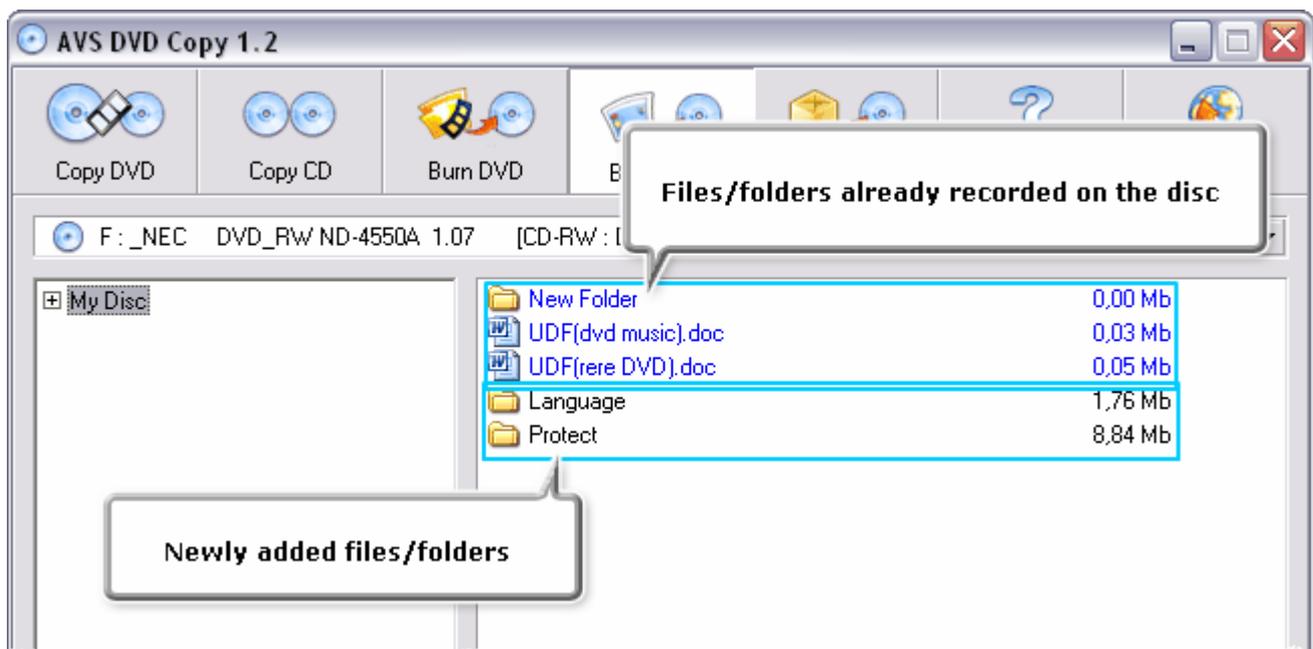
Button	Description
 Level Up	Use this button to move up one level from the current one on your computer hard disk drive.
 My Computer	Use this button to move directly to My Computer folder of your computer hard disk drive to add files from there.
 My Documents	Use this button to move directly to My Documents folder of your computer hard disk drive to add files from there.

 My Videos	Use this button to move directly to My Videos folder of your computer hard disk drive to add files from there.
 My Music	Use this button to move directly to My Music folder of your computer hard disk drive to add files from there.
 Network	Use this button to move directly to view your network to add files from a network drive.

You can also drag the files and folders from the standard windows explorer and drop them to the File list area.

If you would like to add a new folder to your compilation you can use the Express Menu , clicking with the right mouse button within the File list area and select New Folder . To remove files and folders, select them and press the Delete button on the keyboard or again, use the Express Menu .

If you already have some data on the CD/DVD/BD and it was recorded using multisession mode you can add some more data. When you insert such a disc the files already present on it will be displayed in the Files list and marked in blue. The newly added files will be displayed in black font color:



Note : if there are some files already recorded on the disc they will not be removed from the list when you select Delete All in the Express Menu .

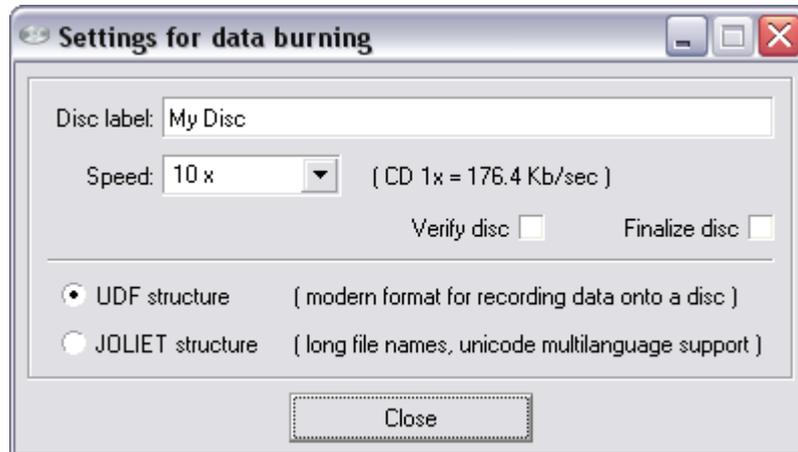
See also the Working with Images section for more detail on how to create and record ISO-images.

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Adjusting Settings

Before you start burning, you might want to view and if needed change the additional settings. To do that you will need to click the Settings button when you are in the Burn DVD , Burn DATA or Burn ISO work mode. The following window will be opened:

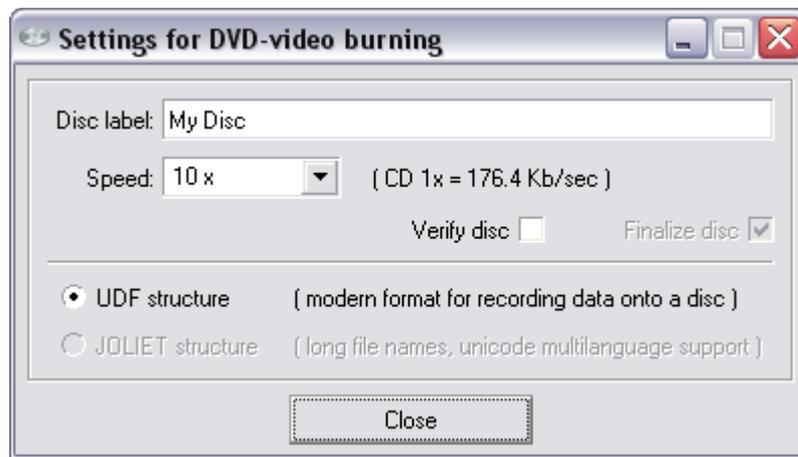


Here you can change the following parameters:

Disc label	The name of the disc. You can select any you like best.
Speed	Possible recording speeds for this drive and disc.
Verify disc	Mark this check-box to verify the burned data after the recording process is over to make sure the disc was recorded without any errors.
Finalize disc	Close the disc after the data is written. You will not be able to add any data to the disc if this check-box is ticked. If you want to record a multisession disc you should leave this check-box unchecked.
UDF	Universal Disk Format - the modern file system supporting larger files, larger filenames (up to 256 characters in length), larger discs and more information about individual files and folders. It includes support for special file properties and other OS-specific data.
Joliet	The extended ISO file system that allows the user use an additional set of filenames (up to 64 characters in length) with Unicode multilanguage support.

The same settings are available for ISO-image burning.

In case you are going to record DVD-video, the Finalize disc setting will be enabled and no change of this setting will be possible. That is done to ensure compatibility with the hardware DVD players. The Joliet structure also cannot be used as DVD-video discs use only UDF file structure:



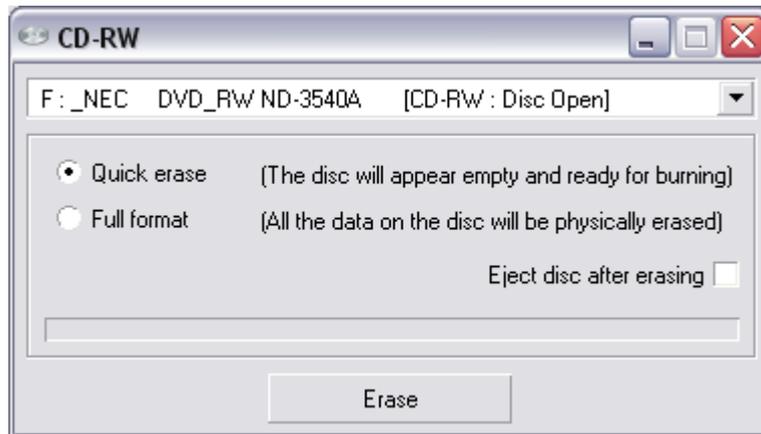
After you select all the parameters you can close the window clicking the appropriate button. The

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Erasing Discs

If you use a rewritable disc (CD-RW, DVD-RW or BD-RE), you might need to erase it prior to recording your compilation. To do that you should press the Erase button when you are in the Burn DVD, Burn DATA or Burn ISO work modes. The erase dialog window will appear to let you delete all the information from the rewritable disc:



Here you should select:

- Drive - the name of the drive that you use to record your discs.
- Erase type - Quick erase or Full format of the rewritable disc.
 - If you select the Quick erase, the data on the disc will not be actually erased as in this mode only the Table of Contents of the disc is deleted, the disc will appear empty and ready for burning but the data can be restored later using special software.
 - If you select the Full format, all the data on the rewritable disc will be physically erased and you will not be able to restore it later. This mode will take much more time. Use this type of erase if you have some confidential data on the disc that must be erased.

You can also enable the Eject disc after erasing check-box, if you do not plan to work with the disc afterwards. If you plan to use the same disc for burning after erasing, it might be useful to leave it unchecked.

When all the erasing parameters are set, you can press the Erase button to start the erasing process itself. Once the erasing is started, it cannot be stopped. Please, wait for the erasing process to be finished.

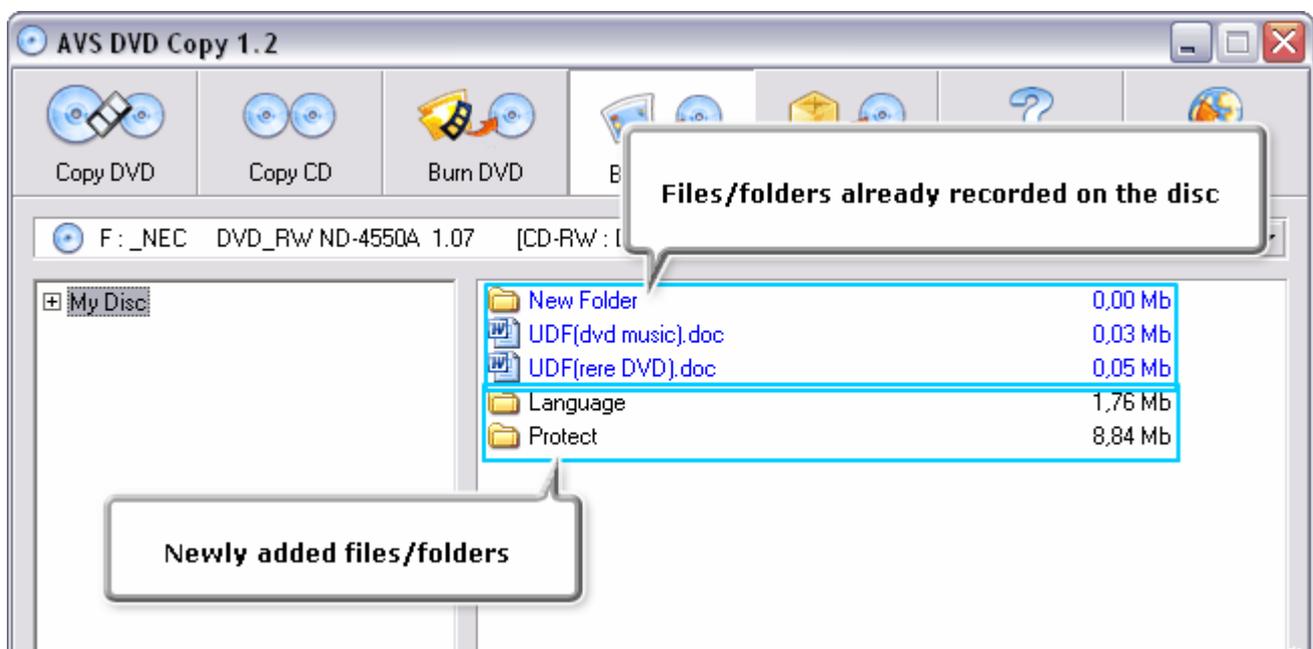
Burning Discs and Images

After you select all the settings click the Start burning! button to start the recording process. You will see the progress of the burning, the current operation and the file that is being written at the moment:



You can click the Cancel button to abort the recording, although it is not recommended as the disc might become unreadable afterwards if the burning process is not complete. You won't be able to read or write a CD-R, a DVD±R or a BD-R after you press this button in the middle of the burning process.

If you already have some data on the CD/DVD/BD and it was recorded using multisession mode you can add some more data. When you insert such a disc the files already present on it will be displayed in the Files list and marked in blue. The newly added files will be displayed in black font color:

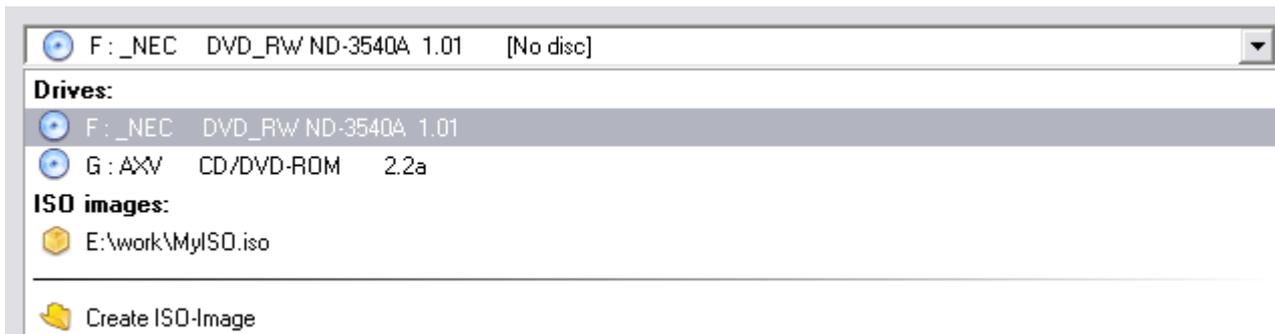


After that you can click the Start burning! button to record the new data onto the disc.

Working with Images

Sometimes you might need to create an image for your disc prior to recording it onto a CD, a DVD or a BD. You can do that with the help of the AVS DVD Copy . Currently it supports ISO-type images, compatible with all the main programs on the market nowadays. You can burn this image onto a CD, a DVD or a BD later if you would like to with AVS DVD Copy or mount it to some third party virtual drive.

You can select the ISO-image creation from the program main window:



After that you should set the file name and destination for your image and then you can record the files and folders to the image as if it were a common optical disc.

If you already have ISO-images on your computer hard disk drive you can burn them onto a CD, a DVD or a BD using the AVS DVD Copy software. To do that you should switch into Burn ISO work mode, locate the image file on your computer and add it to your compilation (using drag-and-drop method, the Add button or the Express Menu). The program will add the files that the ISO-image contains to your compilation.

Note : if you would like to record the ISO-image as a single file to be able to transfer it to a different computer you will need to switch to Burn DATA work mode and add the needed ISO-image as if it were an ordinary file. In this case the files and folders "recorded" into the image will be left inside it and you will not be able to see them without additional software.

Enabling the DMA Mode

DMA mode - Direct Memory Access - allows certain hardware subsystems within a computer to access system memory for reading and/or writing independently of the CPU. Many hardware systems use DMA including disk drive controllers, graphics cards, network cards, and sound cards.

DMA is an essential feature of all modern computers, as it allows devices of different speeds to communicate without subjecting the CPU to a massive interrupt load. Otherwise, the CPU would have to copy each piece of data from the source to one of its registers, and then write it back again to the new location. During this time the CPU would be unavailable for other tasks.

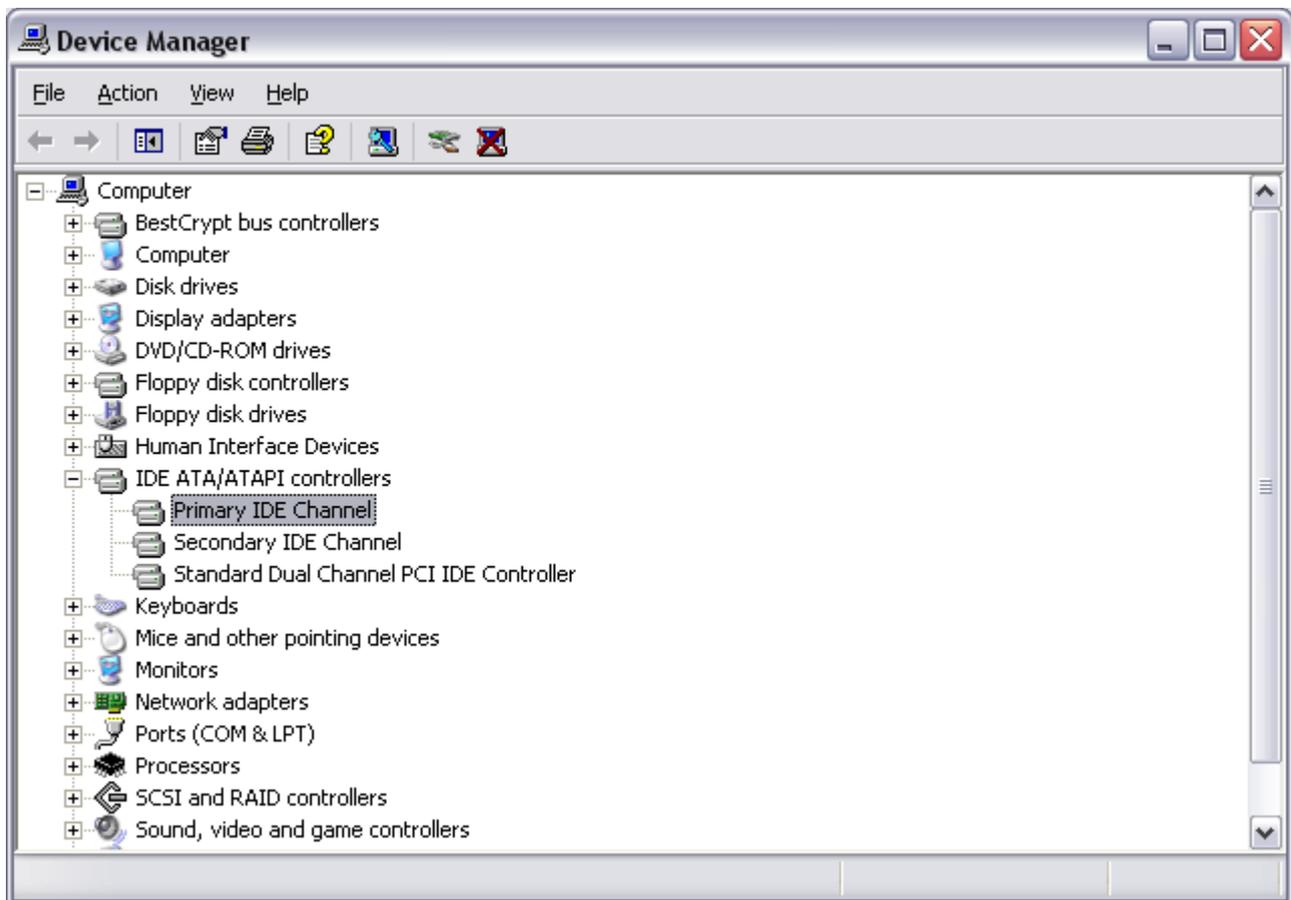
A DMA transfer essentially copies a block of memory from one device to another. While the CPU initiates the transfer, the transfer itself is performed by the DMA Controller. A typical example is moving a block of memory from external memory to faster, internal (on-chip) memory. Such an operation does not stall the processor, which as a result can be scheduled to perform other tasks. It is essential in providing so-called zero-copy implementations of peripheral device drivers as well as functionalities such as network packet routing, file copy, streaming video over a network, etc.

To enable the DMA mode you should do the following:

1. Go to the Windows Start menu and select Control Panel ;
2. In the Control Panel window choose the System icon, double-click it to open the system properties window;
3. In the Hardware tab there is a Device Manager button:

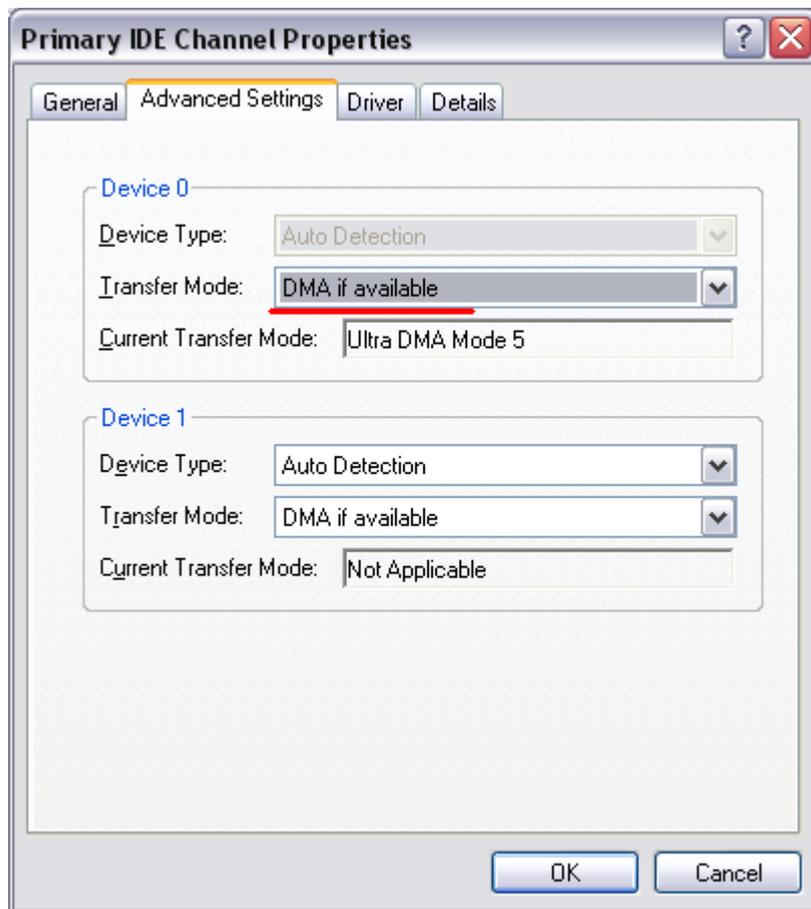


You should click it to open the Device Manager window:

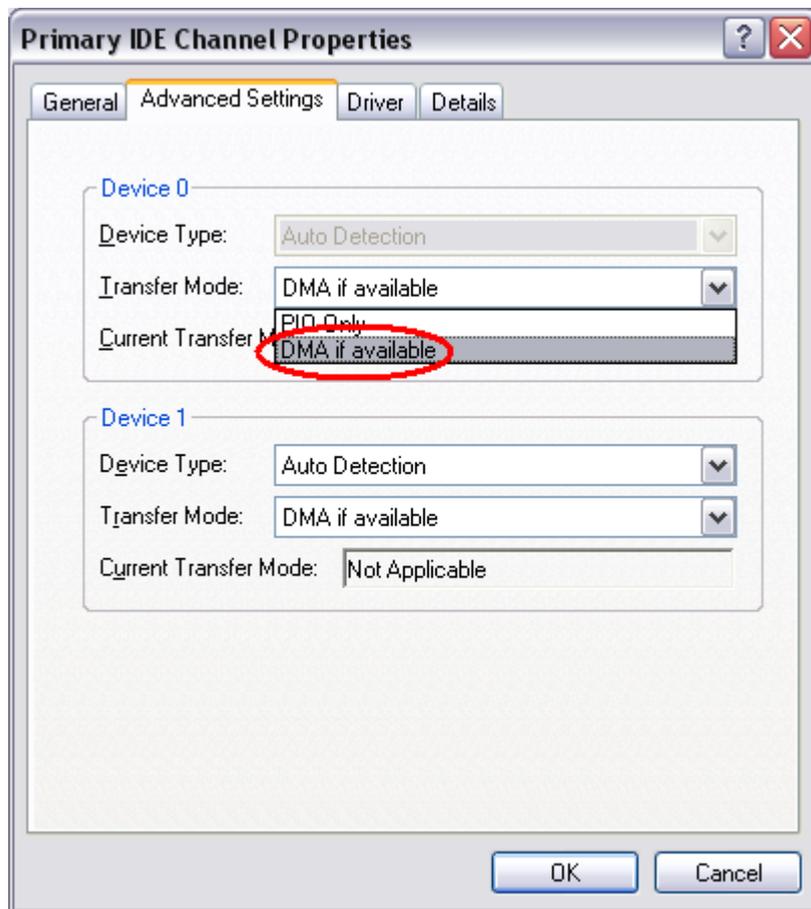


Here you should find IDE ATA/ATAPI controllers among the other devices and click the "+" in front of it to open the list of available IDE channels that the controller has.

4. Double-click the Primary IDE Channel caption to open the controller properties window:



In the Advanced Settings tab you will see the Transfer Mode drop-down box where the current transfer mode is displayed. To change the transfer mode and enable DMA you should open the drop-down box and choose DMA if available option:



After that click OK to accept the changes you have made. The same can be done for the Secondary IDE Channel . After you enabled DMA modes for the IDE channels you can close the device manager window. Sometimes the reboot might be needed to apply all the changes.

Note : not all the controllers allow the user to change the transfer mode. If you install the third party driver for your computer IDE controller see the instructions that go along with the driver software. Usually when the special driver for the controller is installed the DMA mode is enabled automatically by the driver software.

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Disc Types

AVS DVD Copy currently supports three types of optical disc formats that are available for consumer use. This section will better explain the purpose of these formats and their place in history. With the support of other disc types and formats the corresponding information will be added.

- Compact Discs
 - Digital Versatile Discs
 - DVDs of different capacities
 - DVDs of different medium type
 - Blu-Ray Discs
-

Compact Discs

Digital Audio Compact Discs (CD-DA) were first introduced to the consumer audio market in 1980 by Philips and Sony as an alternative to vinyl records and magnetic tape cassettes. In 1984, Philips and Sony extended the technology to include data storage and retrieval and introduced a new format: the Data Compact Disc (CD-ROM).

Since then, the Compact Disc has dramatically changed the way that we listen music and handle electronic information. With a capacity of up to 700 megabytes of computer data or 80 minutes of high quality audio, the Compact Disc has revolutionized the distribution of every kind of electronic information.

In 1990, Philips and Sony extended the technology again and the Compact Disc became recordable (CD-R). Before the introduction of the CD-R technology, compact discs were produced in commercial replication plants by stamping the media with a pre-recorded master. Today, discs are produced in replication plants where large quantities are required. For small production volumes (up to 500 copies or more, depending on your location and manufacturers in your market), it can be significantly less expensive to master your own discs using commercially available Compact Disc writing drives.

Whether a Compact Disc was stamped at a replication facility or "burned" using a compact disc recorder, it can theoretically be read by any available CD-ROM drive. In reality, some inexpensive media and CD players do not work very well together. Only the physical composition of a commercially replicated disc and a CD-R disc are different. The former is coated with a reflective layer of aluminum resulting in a typical silver color. The latter is coated with a reflective layer behind a thin layer of dye (colors can range from blue, silver, green, and others).

In 1997 Compact Disc ReWritable (CD-RW) - a rewritable optical disc format - was introduced. While a prerecorded compact disc has its information permanently stamped into its polycarbonate plastic substrate, a CD-RW disc contains a phase-change alloy recording layer composed of silver, indium, antimony and tellurium. An infra-red laser beam is employed to selectively heat and melt the crystallized recording layer into an amorphous state or to anneal it at a lower temperature back to its crystalline state. The different reflectance of the resulting areas make them appear like the pits and lands of a prerecorded CD. A CD-RW recorder can rewrite 700 MB of data to a CD-RW disc roughly 1000 times.

A Compact Disc contain blocks (or sectors) of 2352 bytes each, going from the center hole to the outer diameter. The block at logical address 0 (beginning of the disc) is located near the center of the disc; the last addressable block (end of the disc) is located near the outer edge of the disc.

Blank discs are usually available in the following sizes (block sizes approximated).

- 21 minutes = 94500 blocks
- 63 minutes = 283500 blocks
- 74 minutes = 333000 blocks
- 80 minutes = 360000 blocks

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Digital Versatile Discs

In January of 1995, Sony was the first to showcase Digital Versatile Disc technology after having announced co-development six months earlier. Three weeks later, Pioneer, Time Warner, and Toshiba announced their own version of DVD, which had major differences from the format developed by Philips and Sony. Immediately disputes started over which format should be used, since each had their own advantages and disadvantages.

The disputes did not stop until May of 1995, when a major report was released by leading hardware and software manufacturers (Apple, Compaq, Fujitsu, HP, IBM, and Microsoft), stating that the two formats were not going to be supported by the industry when there were clear advantages in using one format. The result was a mix of the two formats and the formation of the DVD Forum by all companies involved in the two original formats (Matsushita, Mitsubishi, Pioneer, Philips, Hitachi, JVC, Sony, Thompson, Toshiba, and Time Warner).

In 1996, the specifications for DVD-ROM and DVD-Video were finalized and DVD players began to ship to market. One year later, the DVD Forum worked on the specifications for the first recordable (DVD-R) implementation of DVD. In November of 1997, Pioneer announced the first DVD-R drives, while Matsushita and Toshiba released the first DVD erasable (DVD-RAM) drives.

During 1998, a new coalition was formed to develop re-writable discs specifically for storage of data based on 25-year-old CD patents. This format was initially called DVD+RW and was not allowed to use the DVD logo after the DVD Forum ruled that it could not be used in the branch technology. While the technologies between the two formats are similar, licensing rules dictate differences, some of which can be witnessed in the logo branding of devices and media.

Much like Compact Discs, Digital Versatile Discs are comprised of a continuous spiral of blocks (or sectors) starting from the center hole ending at the outer rim of the disc. The blocks are only of size 2048 bytes, making the format less complicated.

There are several types of DVD discs depending on their capacity and on the medium type .

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The main types of DVDs that differ as to their capacity are:

DVD disc types	First side		Second side		Total capacity
	First layer capacity	Second layer capacity	First layer capacity	Second layer capacity	
DVD-5	4.7 Gb	-	-	-	4.7 Gb
DVD-9	4.3 Gb	4.3 Gb	-	-	8.6 Gb
DVD-10	4.7 Gb	-	4.7 Gb	-	9.4 Gb
DVD-14	4.3 Gb	4.3 Gb	4.7 Gb	-	13.3 Gb
DVD-18	4.3 Gb	4.3 Gb	4.3 Gb	4.3 Gb	17.2 Gb

DVD-5 - single sided, single layer (disc capacity about 4.7 Gb, the working surface of such a disc is situated on one side of it and consists of one layer only);

DVD-9 - single sided, double layer (disc capacity about 8.6 Gb, the working surface of such a disc is situated on one side of it and consists of two layers about 4.3 Gb each);

DVD-10 - double sided, single layer on both sides (disc capacity about 9.4 Gb, the working surfaces of such a disc are situated on both its sides and either consists of one layer about 4.7 Gb);

DVD-14 - double sided, double layer on one side and single layer on the other side (disc capacity about 13.3 Gb, the working surfaces of such a disc are situated on both its sides and consist of two layers about 4.3 Gb each on one side and one layer about 4.7 Gb on the other side);

DVD-18 - double sided, double layer on both sides (disc capacity about 17.2 Gb, the working surfaces of such a disc are situated on both its sides and either consists of two layers about 4.3 Gb each).

Note : the DVD capacity is measured in the so called decimal gigabytes (one gigabyte is equal to 1000 megabytes). The real size of the DVDs is smaller when measured in the so called computer gigabytes or gibibytes (one gigabyte is equal to 1024 megabytes).

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The disc medium can be:

DVD-ROM (read only, industrially manufactured)

A factory-made DVD that is manufactured by a press. The DVD specification Version 1.0 was announced in 1995 and finalized in September 1996. "DVD" was originally an acronym for "digital video disc"; some members of the DVD Forum believe that it should stand for "digital versatile disc", to indicate its potential for non-video applications. Toshiba adheres to the interpretation of "digital versatile disc". The DVD Forum never reached a consensus on the matter, however, and so today the official name of the format is simply "DVD"; the letters do not "officially" stand for anything.

DVD-R (R = Recordable once)

A DVD-Recordable or DVD-R is an optical disc with a larger storage capacity than a CD-R, typically 4.7 GB instead of 700 Mb, although the capacity of the original standard was 3.95 Gb. The DVD-R format was developed by Pioneer in autumn of 1997. It is supported by most DVD players, and is approved by the DVD Forum. A DVD-R can be written to only once.

DVD-RW (RW = ReWritable)

A DVD-RW is a rewritable optical disc with equal storage capacity to a DVD-R, typically 4.7 GB. The format was developed by Pioneer in November 1999 and has been approved by the DVD Forum. Unlike

DVD-RAM, it is playable in about 75% of conventional DVD players. The primary advantage of DVD-RW over DVD-R is the ability to erase and rewrite to a DVD-RW disc. According to Pioneer, DVD-RW discs may be written to about 1,000 times before needing replacement, making them comparable with the CD-RW standard. DVD-RW discs are commonly used for volatile data, such as backups or collections of files. They are also increasingly used for home DVD video recorders.

DVD-R DL (double layer)

DVD-R DL (Dual Layer) (Also Known as DVD-R9) is a derivative of the DVD-R format standard. DVD-R DL discs employ two recordable dye layers, each capable of storing nearly the 4.7 GB of a single-layer disc, almost doubling the total disc capacity to 8.54 GB. Discs can be read in many DVD devices (older units are less compatible) and can only be written using DVD±RW DL burners.

DVD+R (R = Recordable once)

A DVD+R is a writable optical disc with 4.7 GB of storage capacity. The format was developed by a coalition of corporations, known as the DVD+RW Alliance, in mid 2002. Since the DVD+R format is a competing format to the DVD-R format, which is developed by the DVD Forum, it has not been approved by the DVD Forum, which claims that the DVD+R format is not an official DVD format. The DVD+R format is divergent from the DVD-R format. Hybrid drives that can handle both, often labeled "DVD±RW", are very popular since there is not yet a single standard for recordable DVDs. There are a number of significant technical differences between the dash and plus formats, and although most consumers would not notice the difference, the plus format is considered by some to be better engineered.

DVD+RW (RW = ReWritable)

A DVD+RW is a rewritable optical disc with equal storage capacity to a DVD+R, typically 4.7 GB (interpreted as $4.7 \cdot 10^9$, actually 2295104 sectors of 2048 bytes each). The format was developed by a coalition of corporations, known as the DVD+RW Alliance, in late 1997, although the standard was abandoned until 2001, when it was heavily revised and the capacity increased from 2.8 GB to 4.7 GB. Credit for developing the standard is often attributed unilaterally to Philips, one of the members of the DVD+RW Alliance. Although DVD+RW has not yet been approved by the DVD Forum, the format is too popular for manufacturers to ignore, and as such, DVD+RW discs are playable in 3/4 of today's DVD players. Unlike the DVD-RW format, DVD+RW was made a standard earlier than DVD+R.

DVD+R DL (double layer)

DVD+R DL (Double Layer), also known as DVD+R9, is a derivative of the DVD+R format created by the DVD+RW Alliance. Its use was first demonstrated in October 2003. DVD+R DL discs employ two recordable dye layers, each capable of storing nearly the 4.7 GB of a single-layer disc, almost doubling the total disc capacity to 8.55 GB. Discs can be read in many DVD devices (older units are less compatible) and can only be created using DVD+RW DL and Super Multi drives. The latest DL drives write double layer discs slower (2.4x to 8x) than single-layer media (8x-16x). A double layer rewritable version called DVD+RW DL is also in development but is expected to be incompatible with existing DVD devices.

DVD-RAM (random access rewritable)

DVD-RAM (DVD-Random Access Memory) is a disc specification presented in 1996 by the DVD Forum, which specifies rewritable DVD-RAM media and the appropriate DVD writers. DVD-RAM media are used in computers as well as camcorders and personal video recorders since 1998. You can identify a DVD-RAM disc due to lots of little rectangles distributed on the surface of the data carrier. Compared with other writeable DVDs, DVD-RAM is more closely related to hard disk technology, as it has concentric tracks instead of one long spiral track. Unlike the competing formats DVD+R, DVD-R, DVD+RW and DVD-RW, you do not need special DVD burning software to write or read DVD-RAMs on a computer. DVD-RAMs can be accessed like a usual floppy disk or hard drive. DVD-RAM is more suited to data backups and use in camcorders than DVD±RW. The advantages of DVD-RAM discs are the following: long durability of minimum 30 years and they can be rewritten more than 100,000 times, and also the fact that no DVD burning software required in computers as the discs can be used and accessed like a removable hard disk.

Blu-Ray Discs

Blu-ray Disc (BD) is a next-generation optical disc format meant for storage of high-definition video and high-density data. The Blu-ray standard was jointly developed by a group of leading consumer electronics and PC companies called the Blu-ray Disc Association (BDA), led by Sony and Philips. Blu-ray has information capacity per layer of 25 gigabytes.

Blu-ray gets its name from the shorter wavelength (405 nm) of a "blue" (technically blue-violet) laser that allows it to store substantially more data than a DVD, which has the same physical dimensions but uses a longer wavelength (650 nm) red laser.

BD-R (R = Recordable once)

A single-layer Blu-ray disc (BD) can fit 23.3, 25, or 27 GB; this is enough for approximately four hours of high-definition video with audio. A dual-layer BD can fit 46.6, 50, or 54 GB, enough for approximately eight hours of HD video. Capacities of 100 GB and 200 GB, using four and eight layers respectively, are currently being researched; TDK has already announced a four-layer 100 GB disc.

BD-RE (RE = REwritable)

The BD-RE (rewritable) standard is available, along with the BD-R (recordable) and BD-ROM formats, which became available in mid-2004, as part of version 2.0 of the Blu-ray specifications. BD-ROM pre-recorded media are to be available by early 2006.

In addition to 12 cm discs, an 8 cm variation for use with camcorders is planned that will have a capacity of 15 GB.

To ensure that the Blu-ray Disc format is easily extendable (future-proof) it also includes support for multi-layer discs, which should allow the storage capacity to be increased to 100GB/200GB (25GB per layer) in the future simply by adding more layers to the discs.

Blu-ray drives currently in production can transfer approximately 36 Mbit/s (54 Mbit/s for BD-ROM), but 2x speed prototypes with a 72 Mbit/s transfer rate are in development. Rates of 8x or more are planned for the future.

Because the Blu-ray standard places data so close to the surface of the disc, early discs were susceptible to dust and scratches and had to be enclosed in plastic caddies for protection. The solution to this problem arrived in January 2004 with the introduction of a clear polymer that gives Blu-ray discs unprecedented scratch resistance. The coating, developed by TDK Corporation under the name "Durabis," allows BDs to be cleaned safely with only a tissue - a procedure that can damage CDs, DVDs. Bare BDs with the coating are reportedly able to withstand attack by a screwdriver.

Frequently Asked Questions

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- Where can I get a registered version of the software or how can I register the software using the website provided?
- Where can I find a boxed version of your software?
- Is there a user guide or manual available for this software?
- Which operating system I can use AVS DVD Copy with?

Answers

Where can I get a registered version of the software or how can I register the software using the website provided?

Use the windows Start menu to register AVS DVD Copy . Go to Start menu -> All Programs -> AVS Media -> AVS DVD Copy -> Register AVS DVD Copy , enter your Registration name and Serial number that you received during registration.

It is important to enter your name (Registration Name) exactly as you did it at purchase, because "John Doe" and "John A. Doe" or "JOHN DOE" are not the same thing.

The simplest way is to copy the Registration name and the Serial number from your registration letter and to paste them to the appropriate boxes of the registration window. This is ESPECIALLY important if you have Unicode characters in your name.

To do this:

1. highlight your registration name in your registration letter, received from us and right-click it;
2. select "Copy" in the right-click menu;
3. move the cursor to the appropriate box in the registration window of the AVS DVD Copy ;
4. right-click the the box and select "Paste" from the menu. Do the same with the serial number.

Some tips to remember:

1. Make sure that there is no space before and after the registration name and serial number.
2. Make sure that you are not mistaking the letter "O" for the figure "0" (zero).

Internet connection is necessary to complete the registration. Make sure your computer has access to Internet, otherwise you won't be able to register the software!

You might also need to disable your antivirus or firewall or make sure that the AVS DVD Copy program is allowed to access the Internet.

If you are sure that you are entering a correct login-serial number combination, please visit our Registration Help Page to receive immediate help.

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Where can I find a boxed version of your software?

AVS DVD Copy is not sold in boxed version. You can download and install the program from our web site - www.avsmmedia.com .

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Is there a user guide or manual available for this software?

You can use our Help file which is included into installation of AVS DVD Copy or contact our support team at support@avsmedia.com every time you experience any difficulties using our software.

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Which operating system I can use AVS DVD Copy with?

AVS DVD Copy is supported by the following platforms:

Windows versions		
Windows 9x versions		
4.0.950	Windows 95	Unsupported
4.0.1111	Windows 95 OSR 2 & OSR 2.1	Unsupported
4.0.1212	Windows 95 OSR 2.5	Unsupported
4.1.1998	Windows 98	Unsupported
4.1.2222	Windows 98 Second Edition	Unsupported
4.9.3000	Windows Me	Unsupported
Windows NT versions		
4.0.1381	Windows NT 4.0 & NT 3.51	Unsupported
5.0.2195	Windows 2000	Supported
5.01.2600	Windows XP	Supported
6.0.6000	Windows Vista	Supported

You can easily find out your Windows' version info. Go to Start menu and select Run . Type winver and click [OK] .

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How To

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Answers

I have a rewritable disc with closed session, but want to add some files to it as it has much free space. How can I do that?

You cannot add files to a closed rewritable disc without erasing it. But you can retain the information already stored on the disc. To do that you need to copy your files from the disc to some place on your computer, then start the AVS DVD Copy and erase the rewritable disc. After that you can add the previously saved files to your compilation, add new files and click the Burn button. As a result you will have new files added to the disc where all your files are saved as well.

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