Z-DBackup

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1. Z-DBACKUP Help System

1.1. Program

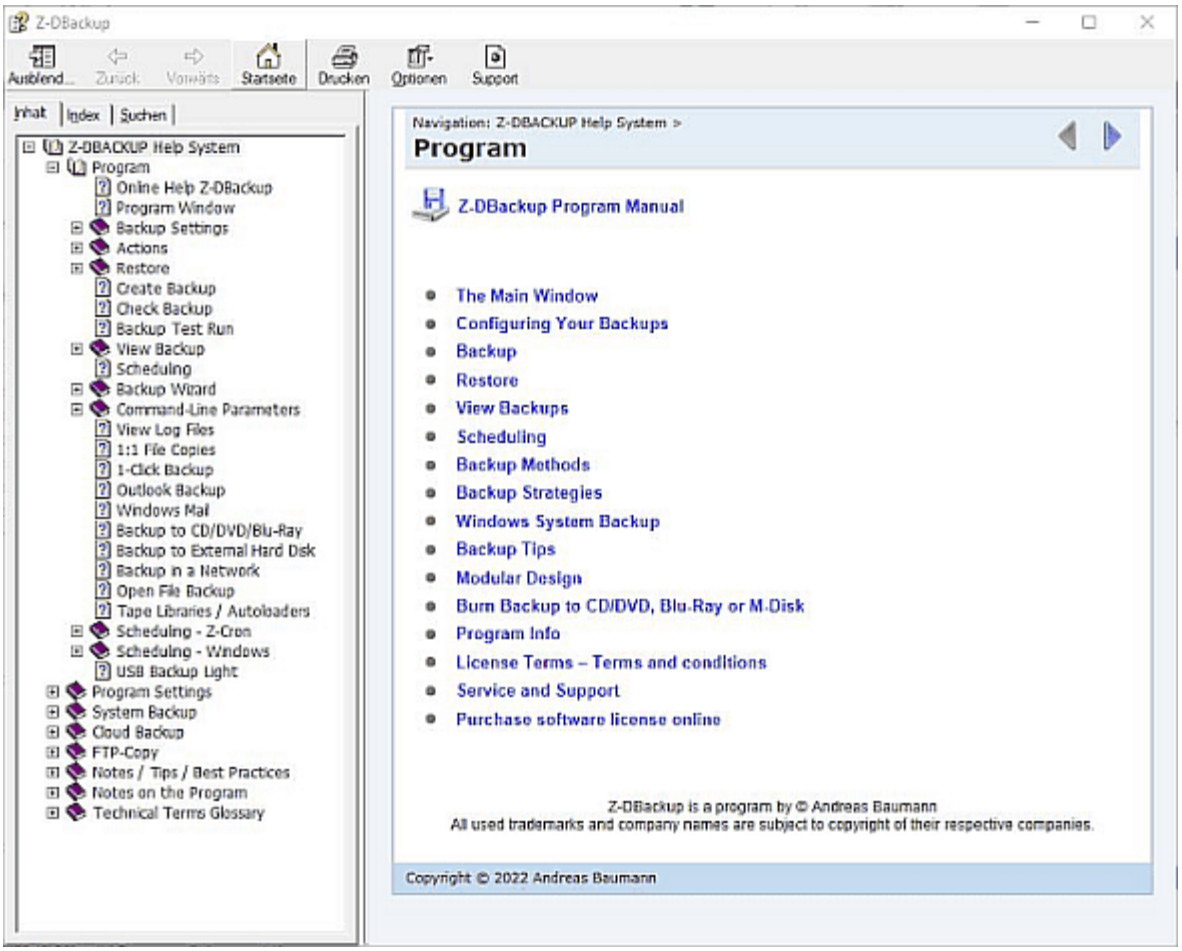
1.1.1. Online Help Z-DBackup

Context-Aware Help Feature

Within Z-DBackup, you have access to the context-sensitive help feature. If you need help with setting or a dialog window, just press the F1 key and the help text is shown in a new windo Z-DBackup uses the Microsoft® HTML-based help system.

YouTube Video - Context-Aware Help Feature

Short description
The help system has two views, one short view and one extended view. Set the help to show the extended information. Because the same help system is used by most Windows applications, other programs may show the help in its short form.



Extended help view

The screenshot shows the extended view of the help system. If you only see the short view if you open the help window, just press the button "Show" to show all information.

Table of contents: The table of contents can be accessed with the tab "Contents".

Index: An alphabetical list of the most important terms. If you cannot find what you are looking for here, you can use the search feature.

Search: This tab offers a full-text search for words. You can also use wildcards (*) in your search terms, as well as logical operators such as **AND**, **OR**, and **NOT**

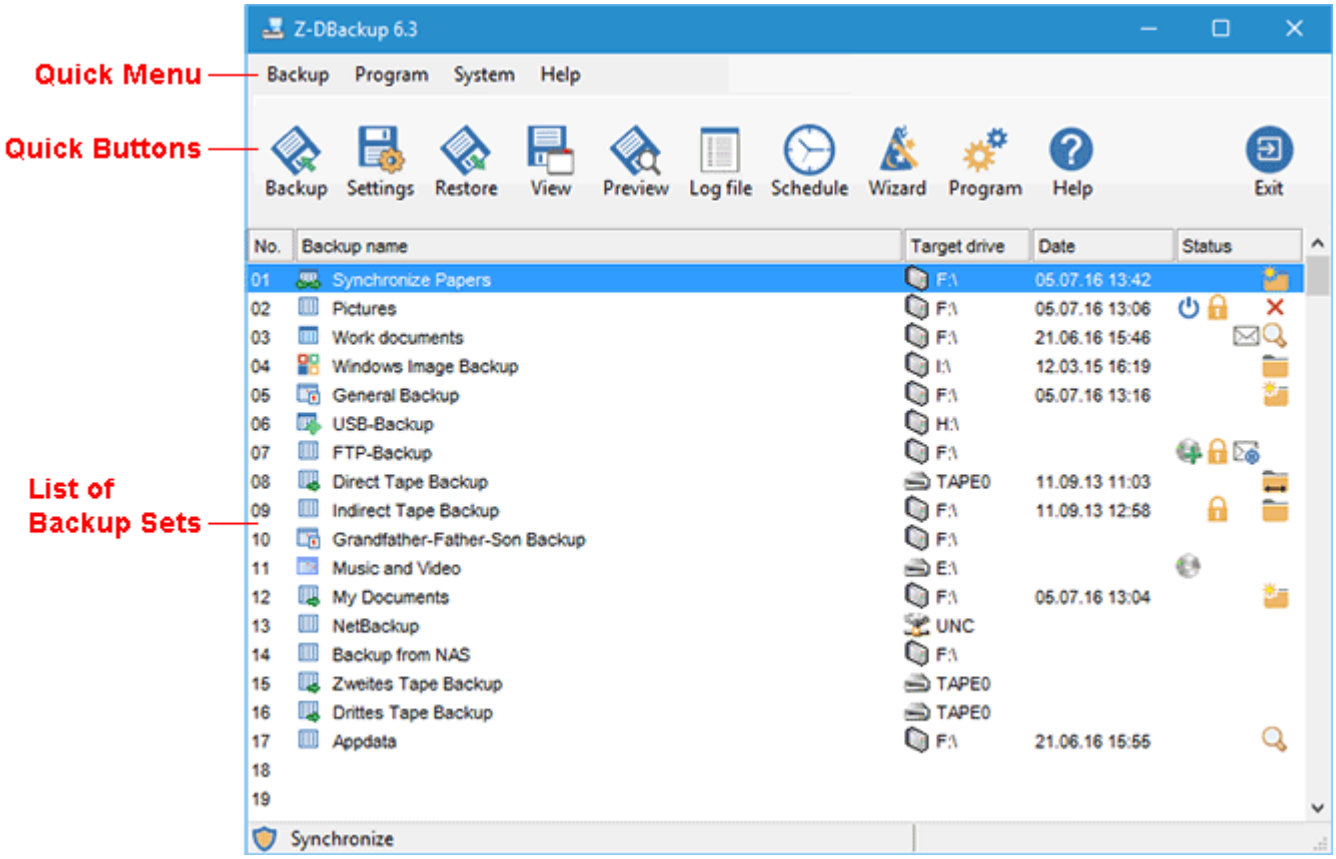
Help Z-DBackup

1.1.2. Program Window

After starting Z-DBackup, the main window ist shown. From this window, all actions, settings, backups and restores can be done. All functions always work with regard to the selected backup set.

YouTube Video - Basic Functions

The main Z-DBackup window is split into two main parts (+ the quick menu)



A context sensitive help feature is available within Z-DBackup. If you need help with a setting or dialog window, just press the F1 key and a help page for the window will appear. Z-DBackup uses the Microsoft® HTML-based help system.

YouTube Video - Context-Aware Help Feature

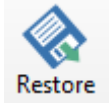
Quick Menu
The quick menu offers access to some functions of the quick buttons and the context menu.Under the menu item System are functions to generate a windows restore disc and windows restore points.

The quick menu can be turned off in the programm settings (tab Setup).

Quick Buttons
These buttons allow quick access to the most important functions of Z-DBackup. If you rest the mouse pointer on one of these buttons for a short time, a tooltip will appear with some information on what the button does.

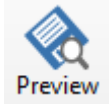
Run Backup

Create/Edit the selected Backup Set

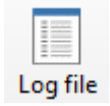


Restore Data from this Backup Set

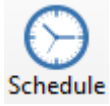
Inspect Data of this Backup Set



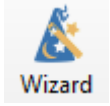
Make a Test Run



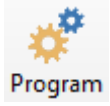
View Log File



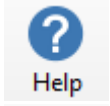
Schedule for Automated Backups



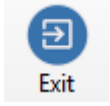
Wizard to Create a New Backup Set



Global Program Settings



Show Help

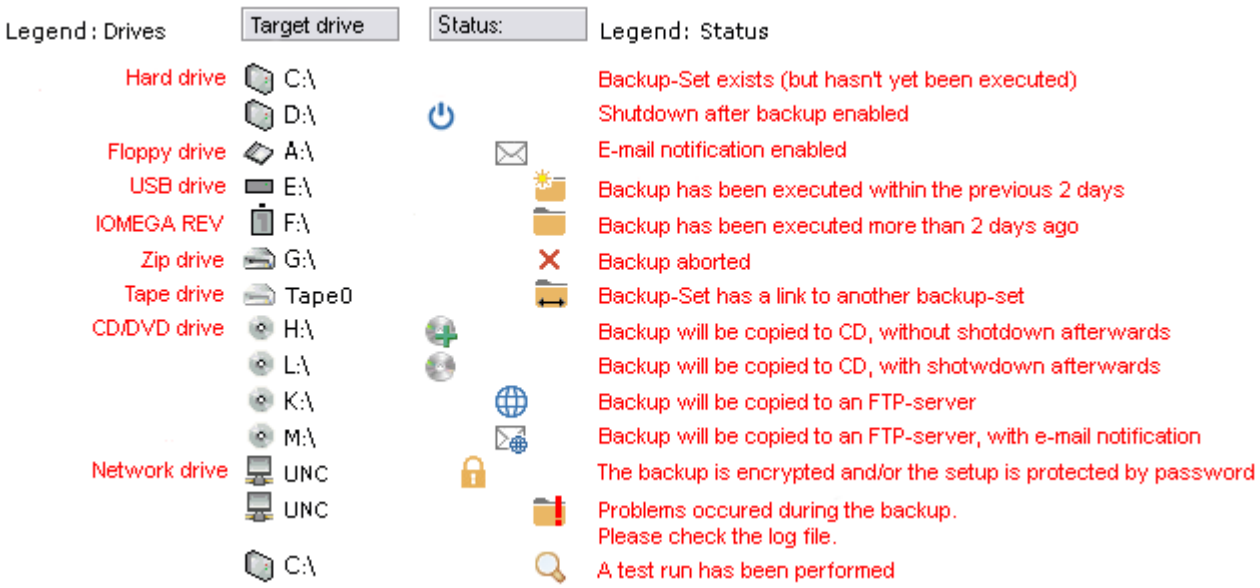


Quit Program and Exit to Windows

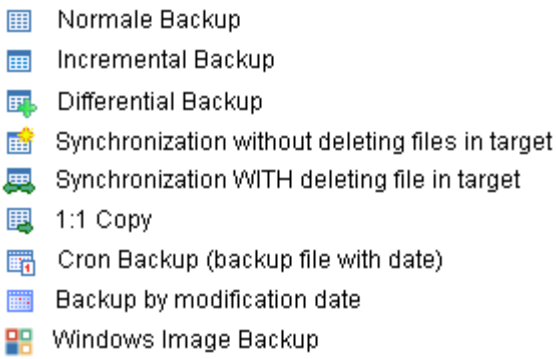
List of Backup Sets
In this area, your backup sets are shown together with their most important settings (what, where, when, how). A backup set can be selected with a mouse click. Then, most quick buttons work on the selected backup set.

You can select a backup set with a mouse click. Also, you can move the selection with the cursor keys.

The icons (symbols) in the list have the following meanings



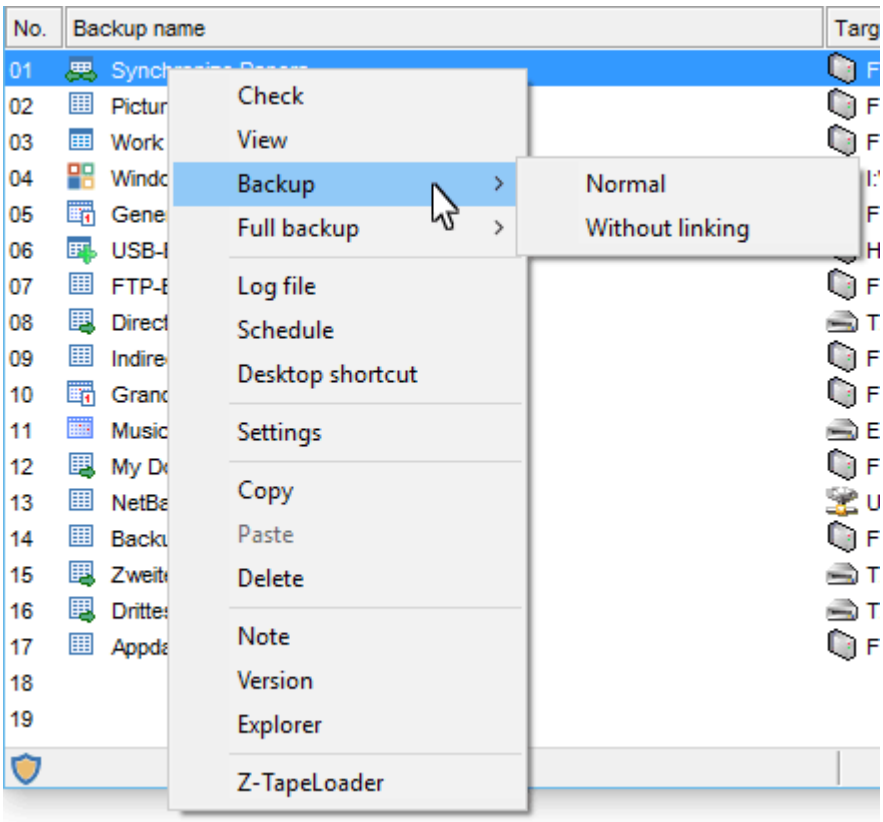
Backup Settings



Context Menu

YouTube Video - Context Menu

With a right-click on a backup set, you can open the context menu. It offers some advanced features, su checking a backup file for integrity, deleting a backup file, or duplicating the whole set with all its settings. The also options to store a note (small message) for a backup set or creating a shortcut on the desktop to start a bac

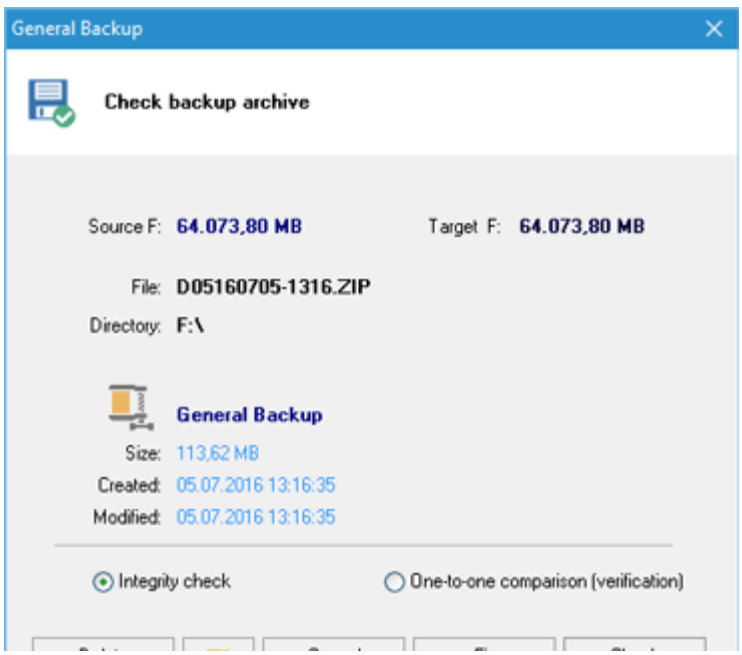


Context Menu – Full Backup

If you use increment or differentielle backups, Z-DBackup will automatically do a full backup bet incremental/differential backups in the specified time interval. With this option, you can reset the date of the la backup or manually start a full backup with an incremental/differential backup set.

Context Menu – Check

With this option, you can check a backup file for integrity, verify all files in it or delete the backup file. Additic the professional version offers an option to fix broken ZIP archives.



Function keys in the main window

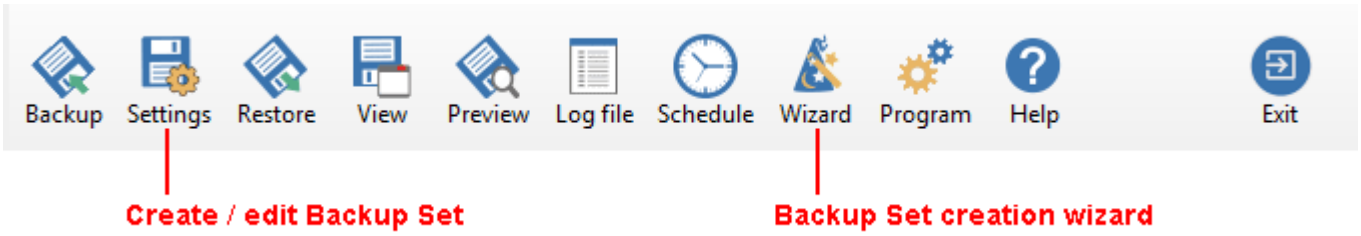
The F2 key opens the general program information for Z-DBackup.

The F3 key opens the note for the selected backup set for viewing or editing.

The F5 key refreshes and centers the Z-DBackup program window on the display. (especially useful Remote Desktop Connections)

1.1.3. Backup Settings

Z-DBackup is controlled with backup sets. You can create up to 20 backup sets in the freeware version and 250 in the professional version. For each backup set, you can specify the files and directories you want to include, whether compression and/or encryption should be used, and other options. These settings are saved, i.e. you can later start a backup with one mouse click.



Z-DBackup offers the professional user a variety of options and settings for backing up data on a computer or in a network. To enable you to use Z-DBackup efficiently, we have created a wizard for you that guides you through all important settings for creating a backup job. Experienced users or users with complicated and large backup tasks can also edit all settings later in the program settings.

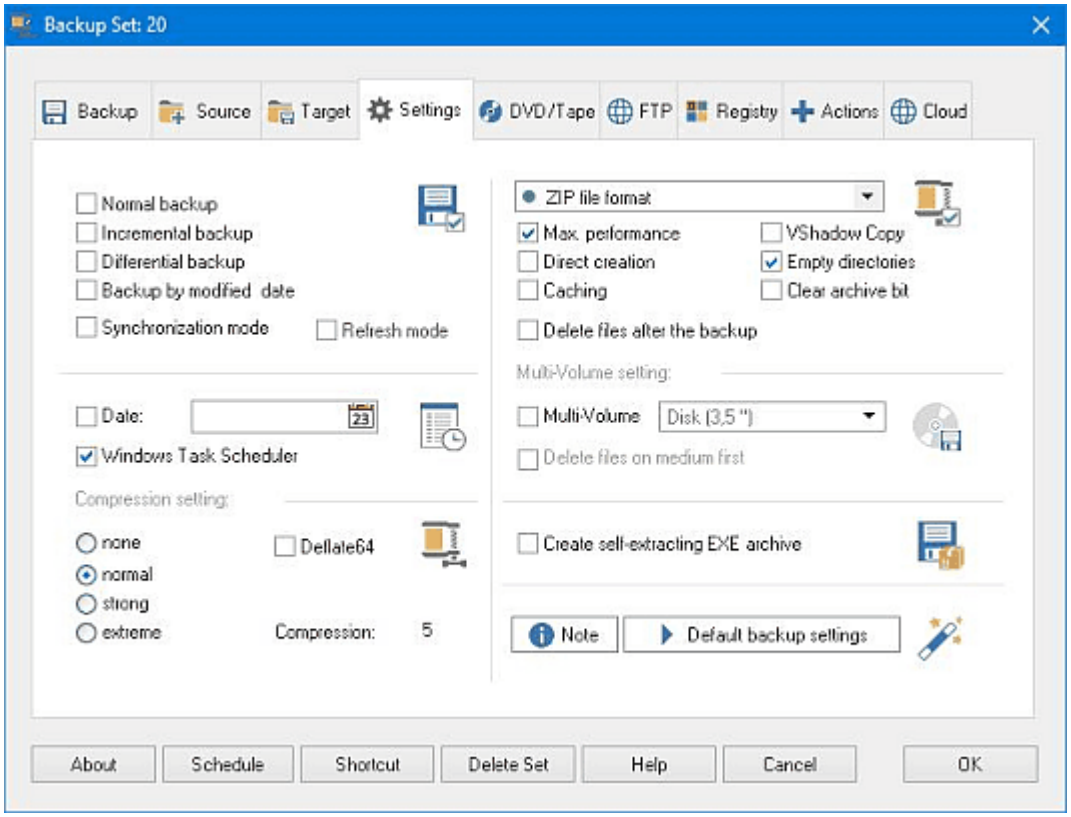
A context sensitive help feature is available within Z-DBackup. If you need help with a setting or dialog window, just press the F1 key and a help page for the window will appear. Z-DBackup uses the Microsoft® HTML-based help system.

Backup Settings

- Settings Window
- Backup Name and Medium
- Backup to NAS
- Backup to USB
- Backup to DVD-RAM
- Backup to Tape
- Backup Target - ZIP
- Backup Target - COPY
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry
- Delete old backups

1.1.3.1. Settings Window

Z-DBackup is used with backup sets (up to 250 in the professional version and 20 in the free version). For each backup set, you can specify which files and folders to include in the backup, whether the backup should be compressed, encrypted, where it should be stored etc. These settings are saved so that you can do regular backups easily.



Settings in the Backup Set Window

The Backup Set Window is split into seven tabs. All settings are with regard to the backup set which is selected in the main program window. Its number is shown in the title bar for clarity. The tabs are as follows:

Backup	Backup name and medium
Source	Source path (what should be backed up)
Target	Target path (where should it be backed up)
Settings	Extended settings
DVD/Tape	Tape drives, CD burners and external programs
FTP/SSH	FTP copy settings
Registry	Registry backup
Actions	Actions before and after the backup

All basic settings for a backup set are done on the tabs Source and Target. For a quick first backup, you only

need very few of these options:

- Backup name
- Source path
- Target path

With a click on OK, the settings are saved and the window is closed. The buttons at the bottom of the window have the following functions:

Info	View / edit documentation for the backup set
Schedule	Scheduling with Z-Cron or the Windows Task Scheduler
Shortcut	Creates a desktop shortcut for the backup set
Delete set	Delete the backup set
Help	Show help for the current tab
Cancel	Close window without saving changes
OK	Save changes and close window

Backup Settings

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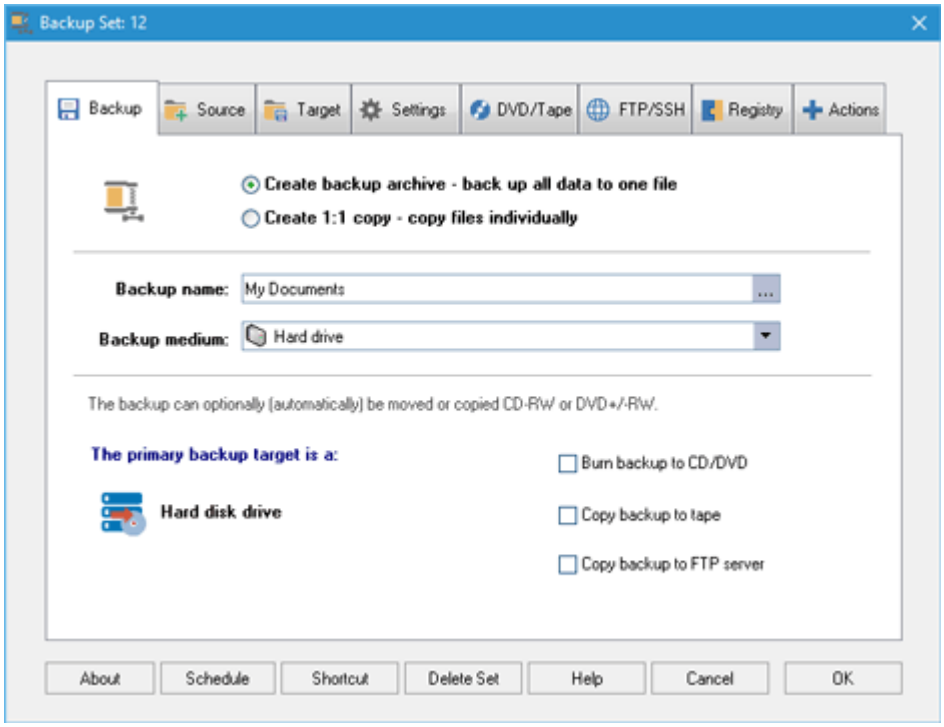
- Delete old backups

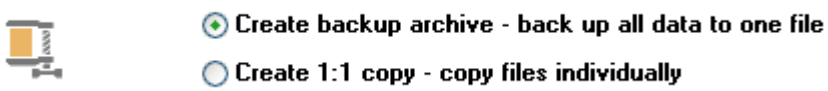
1.1.3.2. Backup Name and Medium

In the first tab of the backup set options you can specify the name of this backup set and the backup medium.



Backup format

Z-DBackup can either save the data to an archive file with optional compression and/or encryption, or create a 1:1 copy of the files in the source directory. Depending on the backup format, different option are available in the setup of Z-DBackup.



Z-DBackup is by default configured to create backup archives in the ZIP format.

Backup name

Here you can enter a (meaningful) description of this backup set. You can use up to 35 characters.

You can select a predefined backup description with the ... button.

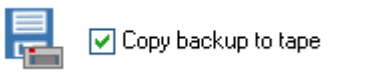
The following predefined backup sets are available in the Z-DBackup wizard:

Description	Feature
Backup Outlook Professional	The directories and registry entries of Microsoft Outlook are saved.
Documents and Settings	Documents and settings are saved.
Music and Video	Music and videos are saved.
Backup Windows Mail	The Windows Mail Application Data folder and hidden registry entries will be saved.
Backup Apple Itunes	Apple Itunes folders will be saved.
Backup Windows Live-Mail	The Windows Live Mail Application Data folder and hidden registry entries will be saved.
Backup Thunderbird Mail	The Thunderbird Application Data folder and hidden registry entries will be saved.
Backup Google Chrome	The Google Chrome Application Data folder containing bookmarks, extension, history, cache and more, will be saved.

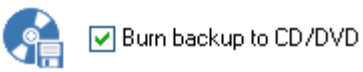
Backup medium

This setting lets you define which rewritable backup medium is to be used with this backup set.

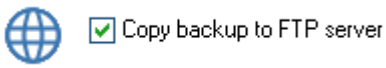
The backup medium can be a removable medium, a network drive or a local drive. From there, the backup can optionally (automatically) be copied or moved to tape, CD-R/RW, DVD+/- R/RW or Blu-Ray disc.



Copy backup file to tape. This option is activated if the add-on module Z-TapeDump or Z-TapeBackup is installed.



Burn backup file to M-Disk or CD/DVD/Blu-Ray. This option is activated if the add-on module Z-DataBurn is installed.

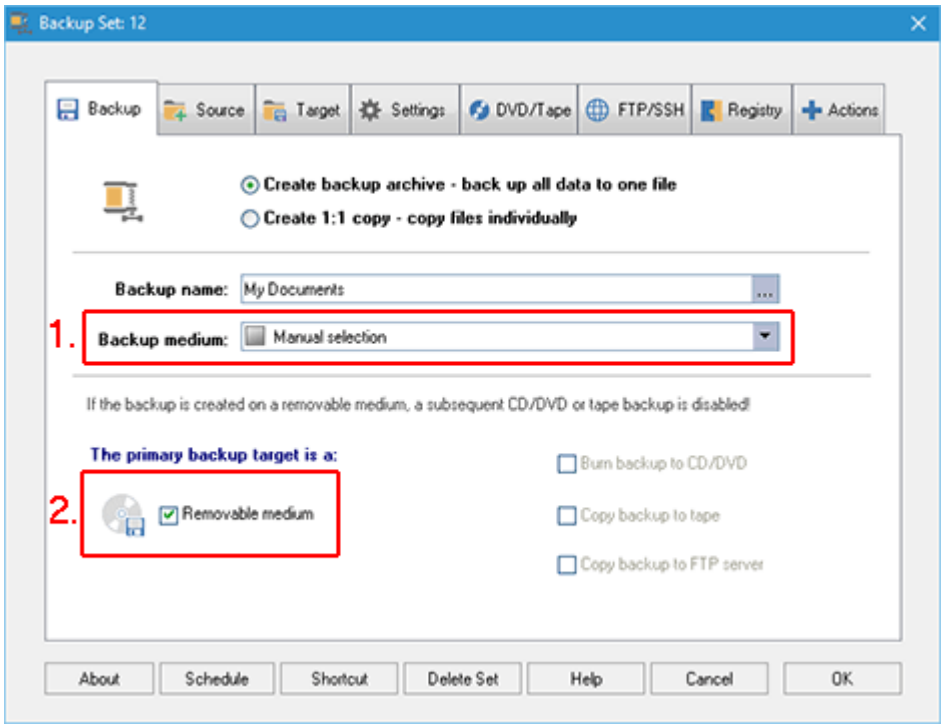


Copy backup file to an FTP server. This option is activated if the add-on module Z-FTPcopy or Z-FTPcopy is installed.

If the backup is immediately saved to a removable medium, the option to copy it to tape or CD/DVD/Blu-Ray is disabled!

Disable multi-spanning for backup archives

If you want to disable the automatic multi-spanning for removable mediums:



1. In the **Backup medium** list, select **Manual selection**.
2. Deactivate the option **Removable medium**.

Backup Settings

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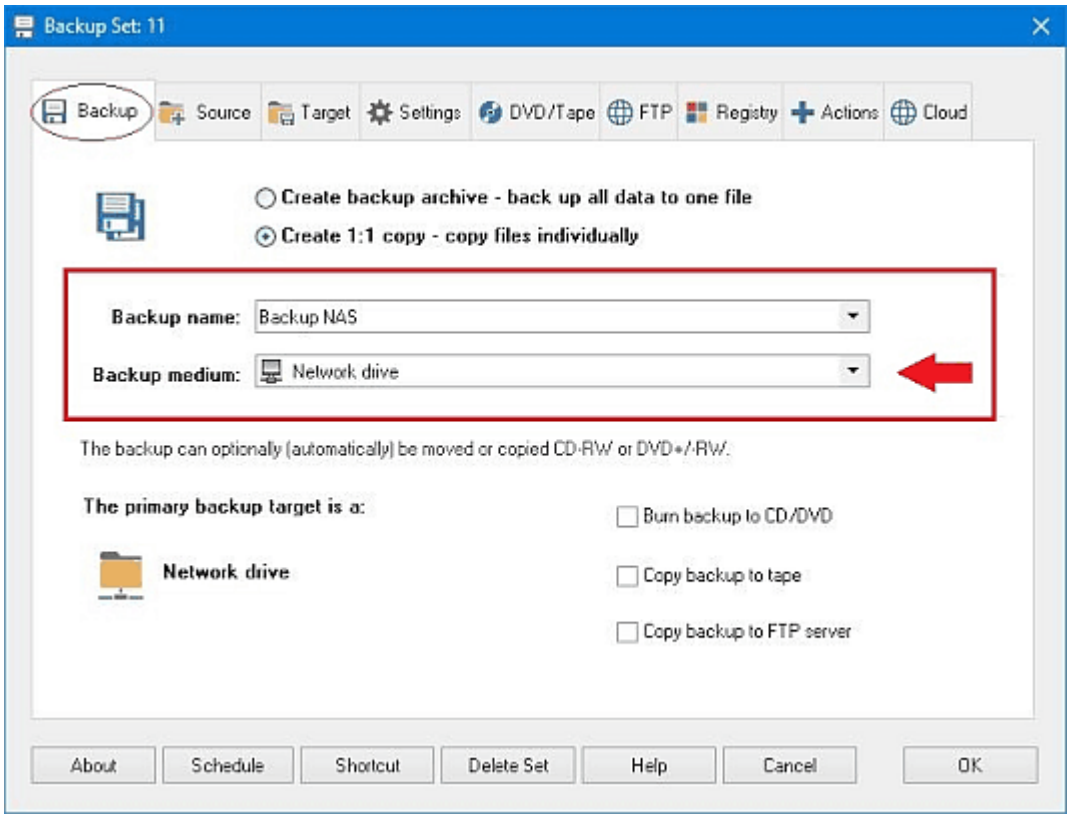
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry
- Delete old backups

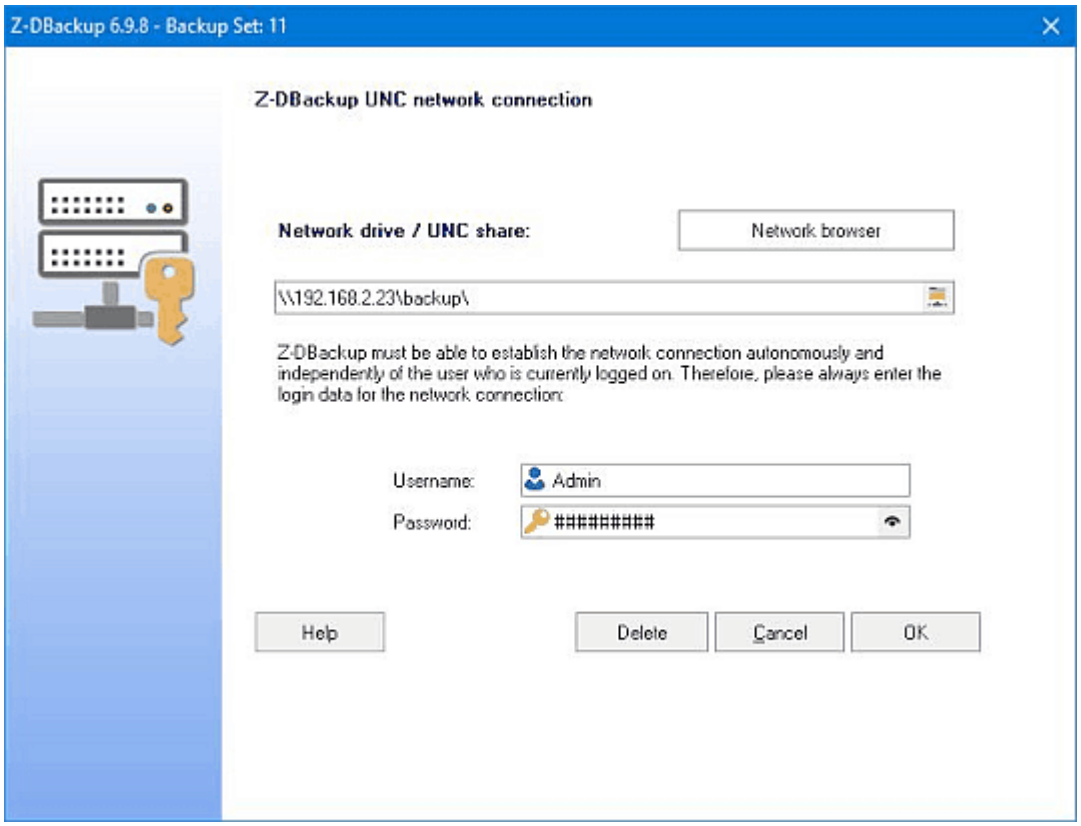
1.1.3.3. Backup to NAS

Backup in a network

A network is, in the most general sense, everything that connects computers. It can be used for backups in various ways, such as backup to a shared drive on a workstation, backup of the office server or backup to a stand-alone storage solution in a network (network attached storage – NAS).

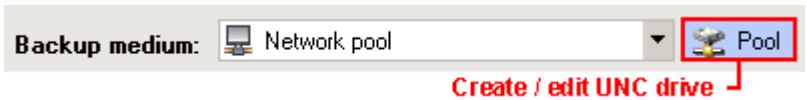


Z-DBackup must be able to maintain a network connection on its own independently of the current user and therefore uses UNC paths instead of drive letters. UNC is short for universal naming convention and is a standard system for naming network drives. With a UNC path, any ressource in a network can be accessed directly without a drive letter mapping.



UNC network pool

Equivalently to the USP pool, several UNC drives can be pooled in a network pool. If a pool is selected as the target, the backup is copied to the first available network drive in this pool.

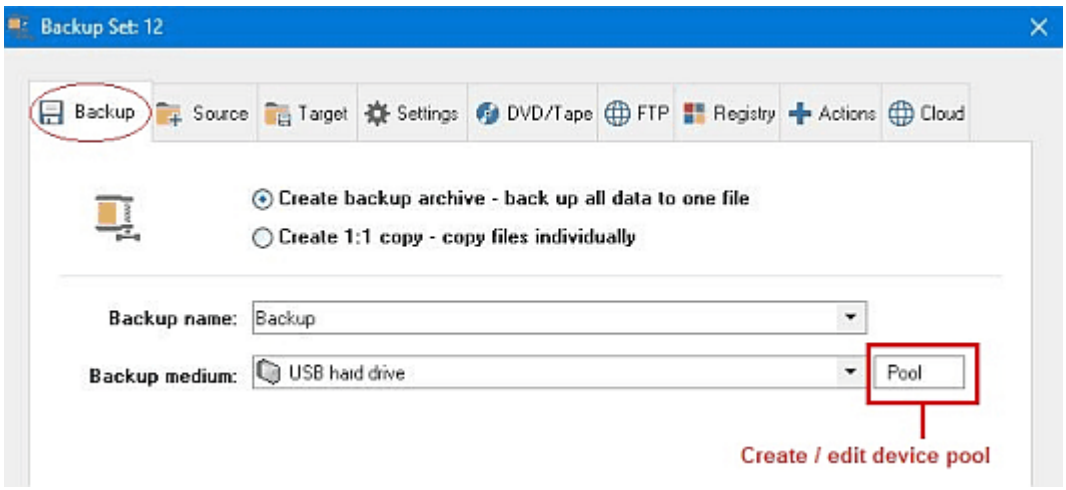


Backup Settings

- Settings Window
- Backup Name and Medium
- Backup to USB
- Backup to DVD-RAM
- Backup to Tape
- Backup Target - ZIP
- Backup Target - COPY
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry
- Delete old backups

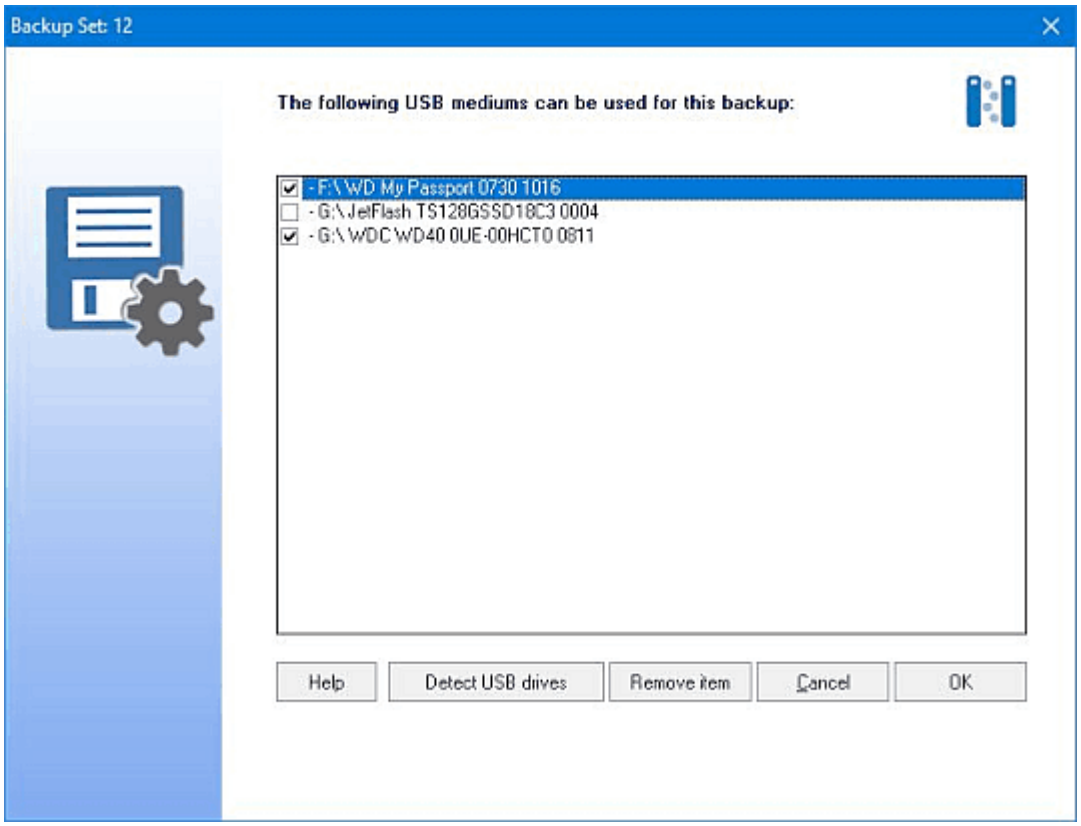
1.1.3.4. Backup to USB

A USB device is used as a removable medium. When connected to the computer, it is assigned a drive letter by the Windows operating system. If Z-DBackup cannot locate the path for a USB device (memory stick or hard disk), it will try to determine the correct drive letter automatically. You can also include several USB devices in a pool for the backup.



USB device pool

To add new mediums to a pool, connect the USB device to your computer and click on the button "Detect USB drives". A USB device is added to the pool if the box next to its name is checked.



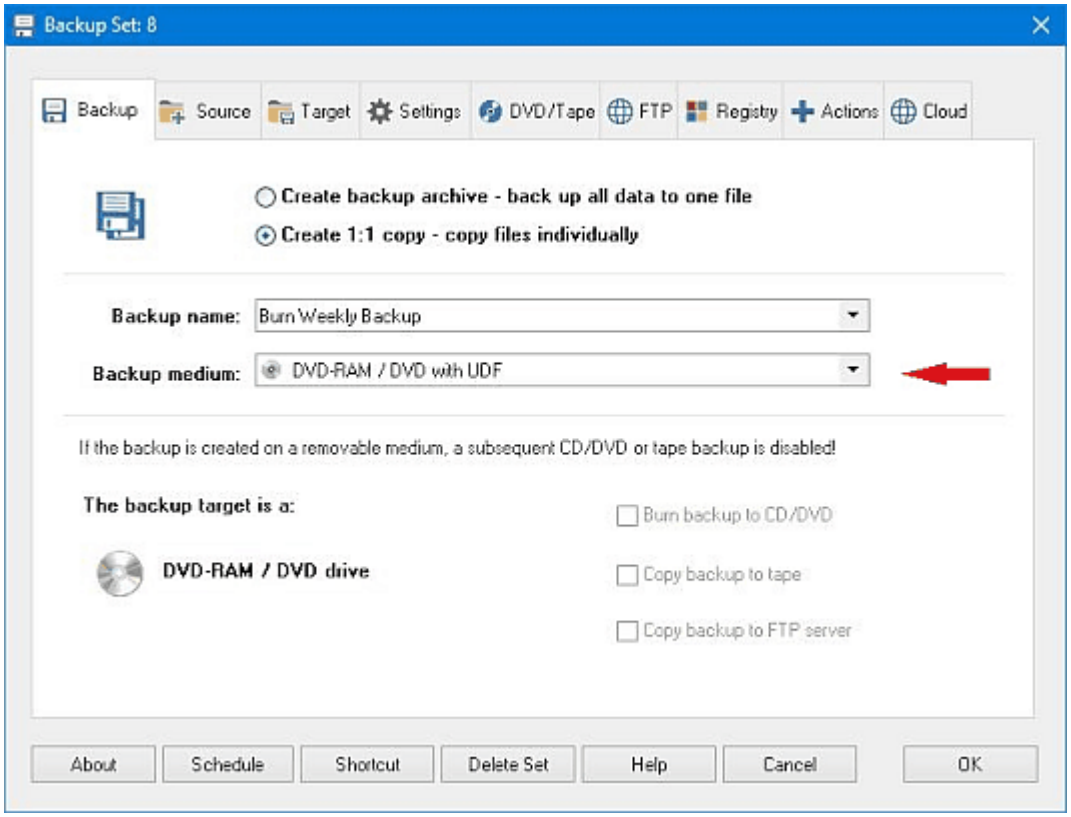
Example: Two USB HDD from are pooled for drive F:\. The backup is created on one of these USB HDD.

Backup Settings

- Settings Window
- Backup Name and Medium
- Backup to NAS
- Backup to DVD-RAM
- Backup to Tape
- Backup Target - ZIP
- Backup Target - COPY
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry
- Delete old backups

1.1.3.5. Backup to DVD-RAM

In the first tab of the backup set options, you can specify the backup description and the backup medium.



Backup to DVD-RAM
Windows (since Windows XP) can read a DVD-RAM that is UDF or FAT32 formatted and even write to it in FAT32. A FAT32-formatted DVD-RAM cannot be used as a backup medium by Z-DBackup. This is caused by the maximum file size restriction of 4 GB in FAT32.

If a backup > 4 GB is created on a FAT32-formatted DVD-RAM, Z-DBackup will not prompt the user to change the medium and the backup is aborted! To prevent this, a DVD-RAM must be formatted with UDF 1.5 or even better UTF 2.0. To format and burn a DVD-RAM with the UDF file system you need a UDF driver, except under Windows Vista. A UDF driver is included with most DVD-RAM drives.

⚠ A FAT32-formatted DVD-RAM cannot be used as a removable backup medium by Z-DBackup!

The advantages of a DVD-RAM in comparison to most other recordable or rewritable DVD blanks are that they were specifically conceived for use as an archiving medium. Data on a DVD-RAM has a durability of 30 years minimum if the disc is handled with care. Furthermore, the disc can be used almost like a hard disc or floppy disc and no burning

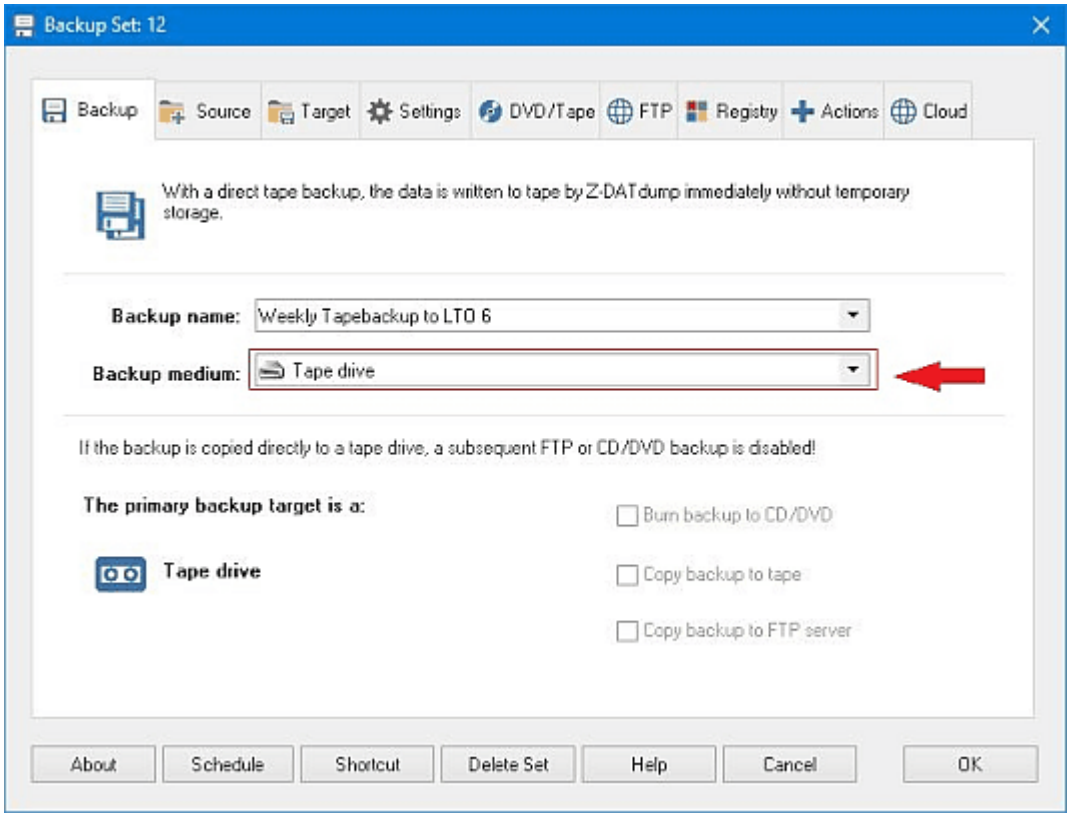
software is needed to record it. A DVD-RAM can be rewritten up to 100,000 times.

Sometimes an appropriate DVD-RAM driver is missing with OEM DVD-RAM drives. In this case you have to obtain a suitable driver from the internet.

Backup Settings

1.1.3.6. Backup to Tape

Z-DBackup is our main backup program offering extensive options for professional backups. Various backup strategies for tape backups can be realised when using Z-DBackup and Z-TapeBackup together. They are the perfect duo for fully automatised backups in enterprises. Backup tasks for tape drives can be created and fully managed from within Z-DBackupe.



If the backup is immediately created on a tape medium, the optional FTP and CD/DVD/Blu-Ray backup is not available.

LTO Tape Backup

- Tape Backup
  - Tape Target
  - Tape Setting
  - Tape Libraries / Autoloaders
- Add-On Modules

Backup Settings

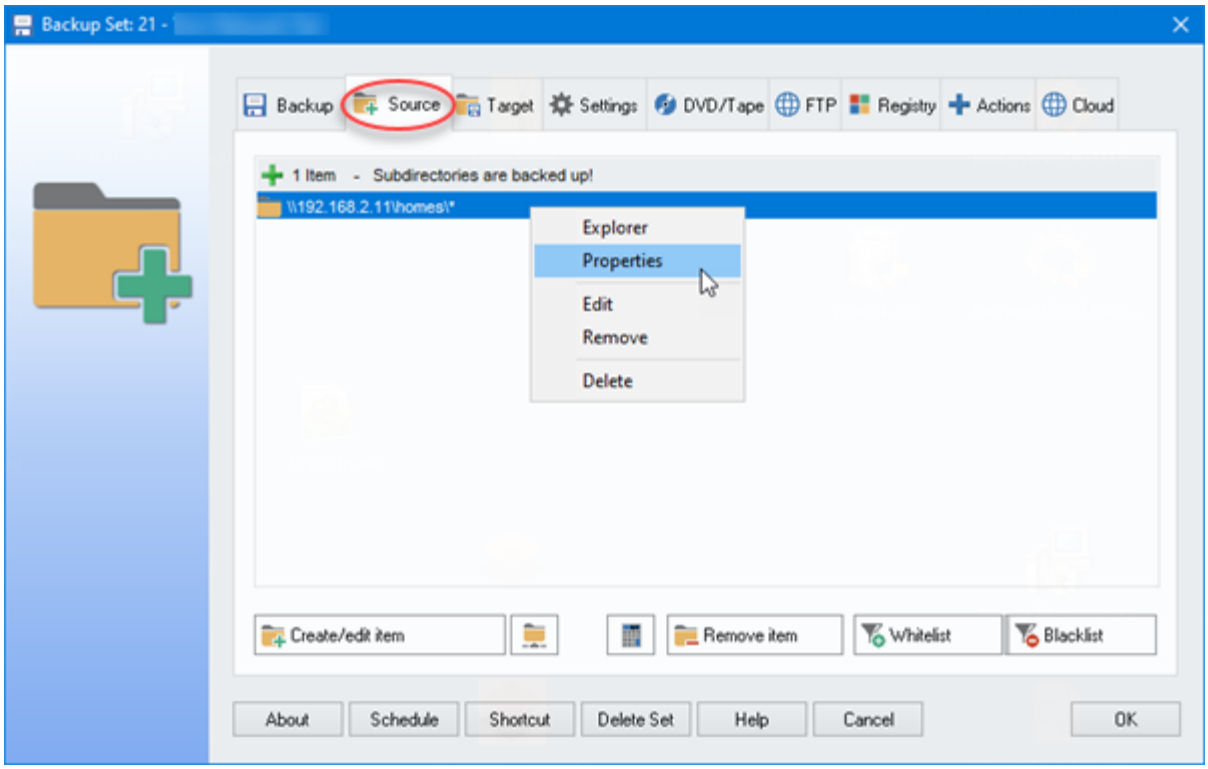
- Settings Window
- Backup Name and Medium
- Backup to NAS
- Backup to USB

- Backup to DVD-RAM
- Backup Target - ZIP
- Backup Target - COPY
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry
- Delete old backups

1.1.3.7. What should be backed up?

1.1.3.7.1. Source File List

This list contains all files and directories that you have selected for backup. You can add entries by drag & drop or with the button "Add/edit entry". For each Backup Set, only files and directories from one volume can be selected, but multiple Backup Sets can be linked to form a backup job list. Create one Backup Set per volumne first and then link those Backup Sets to form a chain.



You can remove entries from the list by selecting an entry with the mouse and clicking the button "Remove entry" or by pressing the Del key on your keyboard.

Selecting entries

To select a single entry in the list, just click on it with the left mouse button. To select a region of entries, click on the first entry, then press Shift and keep it pressed while you click on the last entry of the region.

Non-continuous selection: Select entries while keeping Ctrl pressed.

Right-click

Opens the dialog "Properties & Edit"

Backup from the network

Clicking this button will set a network or NAS drive as the source for the backup.

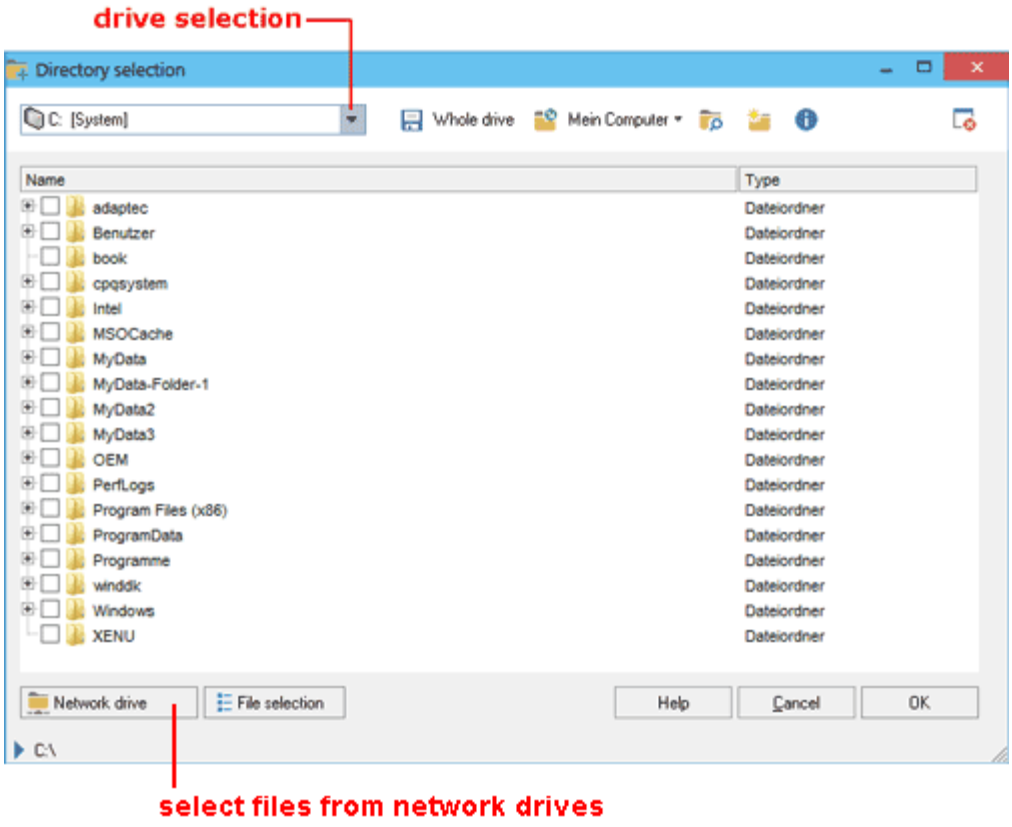
To back up a network drive, the network connection credentials must first be configured before files and directories from the network can be selected for backup. If files/directories of a local hard drive have already been selected, this button will no longer be displayed.

Calculate total size

This button calculates the total size of the selected files.

Create File List

When you click on the button Add/edit entry, a dialog window appears in which you can select files and directories which you want to back up.



You can select up to 254 directories (64 in the free version) for backup. Subdirectories are always included in a

backup and do not count.
e.g. "C:\Program Files*" counts as one directory, no matter how many subfolders it contains.

Notes:

Only the files of one volume can be selected per Backup Set.

If you want to save directories from different volumes in one step, you must create one backup set for each volume and then link them to form a backup job chain.

You can backup your whole hard disk with Z-DBackup, but you can only restore your operating system to a working state using a boot disc. Alternatively, use a program for creating partition images!

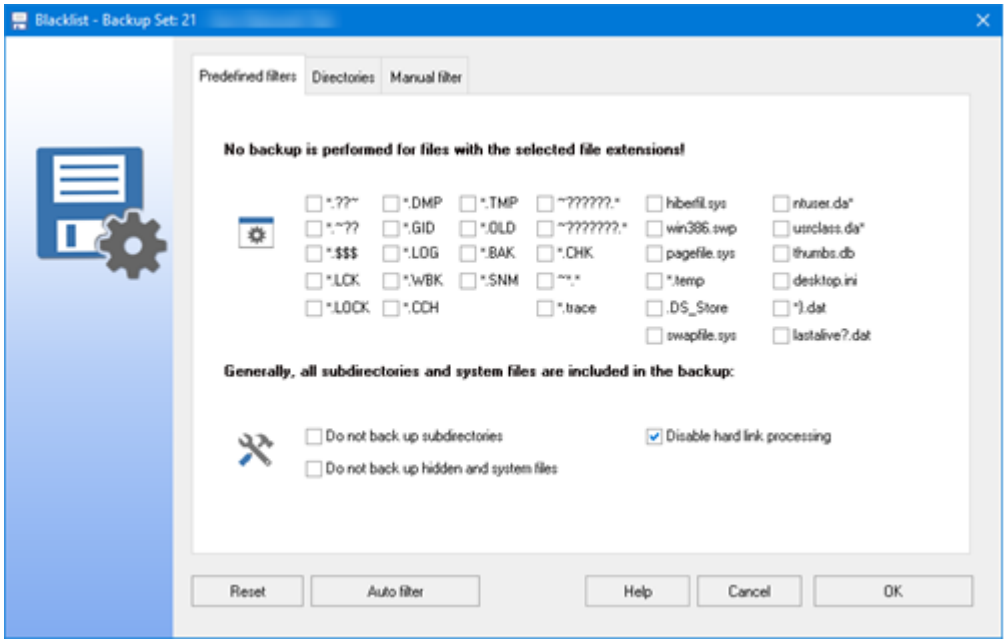
Generally, all filetypes are included in a backup. If you only want to include certain file types, you can use the whitelist for that.

If it is a network backup, this option is not available.

Generally, all files and subdirectories are included in a backup. If you want to exclude certain files or directories (such as system files), you can do so with the blacklist.

1.1.3.7.2. Filter Settings

If certain files or directories should be excluded from the backup, you can select them in this window.



By default, all subdirectories and files in a backup set are included in the backup. This can be changed here, in the first tab.

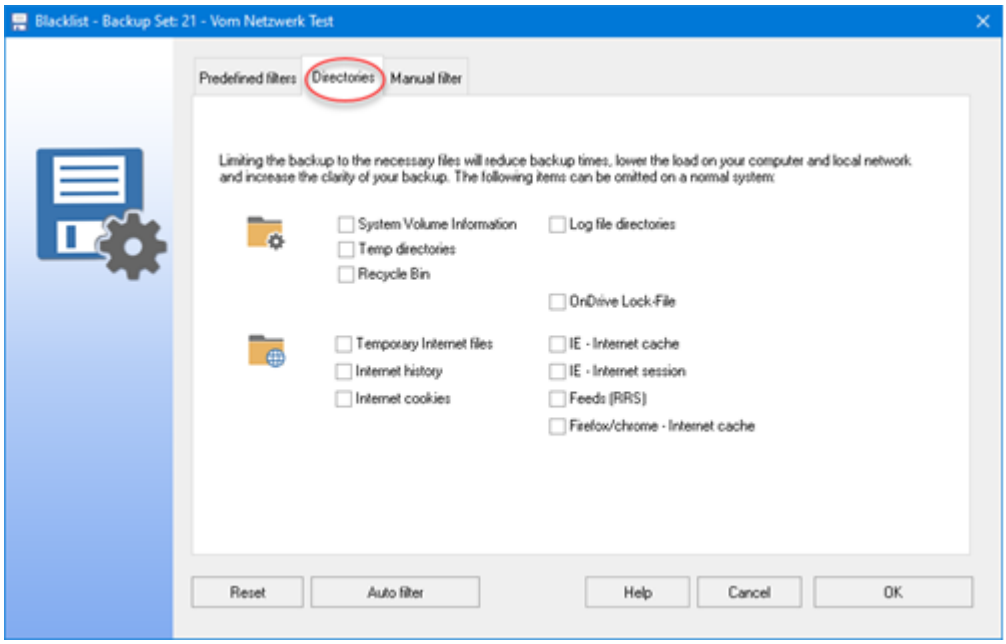
Disable Hardlink and Junction Point Processing

NTFS Junction Points and hard links exist in newer Windows operating systems from Windows 2000 onwards. Junction points are a special method to link to a directory from another position in the file system, i.e. to make a directory appear in more than one place. In contrast to a simple .LNK shortcut, a junction point behaves just like a normal directory in Windows Explorer.

Backing up junction points is usually not necessary. In case you do want to include junction points and hard links in the backup, you can deselect this checkbox.

Only backup sets performing a 1:1 copy can currently include junction points in the backup.
This option is not available for backup archives.

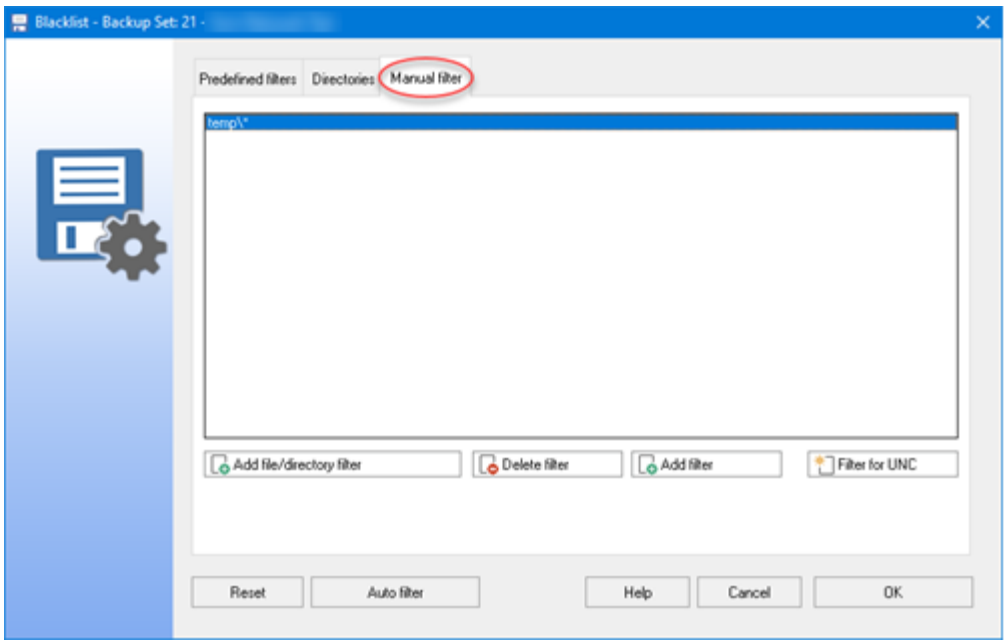
Directories



Here you can optionally select some predefined system directories that you might want to exclude from the backup.

Custom Filters

Here you can specify files or directories which you want to exclude from the backup. Z-DBackup also offers some predefined entries for backups of the system partition (usually C:\).



File/Directory Filter

Usually, all files and subdirectories are copied during a backup. If you want to exclude a complete subdirectory, the directory must be specified with its relative path. This button takes you to a dialog window in which you can simply select the files or directories to be put on the custom blacklist.

Remove Filter

You can remove a blacklist entry from the list by clicking on this button.

Add Filter

If you want to exclude some files or directories from the backup, you can specify a custom blacklist entry with this button. The DOS wildcards **?** and ***** are supported. You can also specify complete filenames (without path).

Filter for C:\ (Autofilter)
This button adds some predefined files and folders to the blacklist if you want to make a complete backup of the system partition C:\. These predefined filters include temporary files, internet log files, cookies, etc.

Context Menu

 A right-click on a blacklist entry opens the context menu which offers some more options.

Option: **Edit**

Edit a blacklist entry.

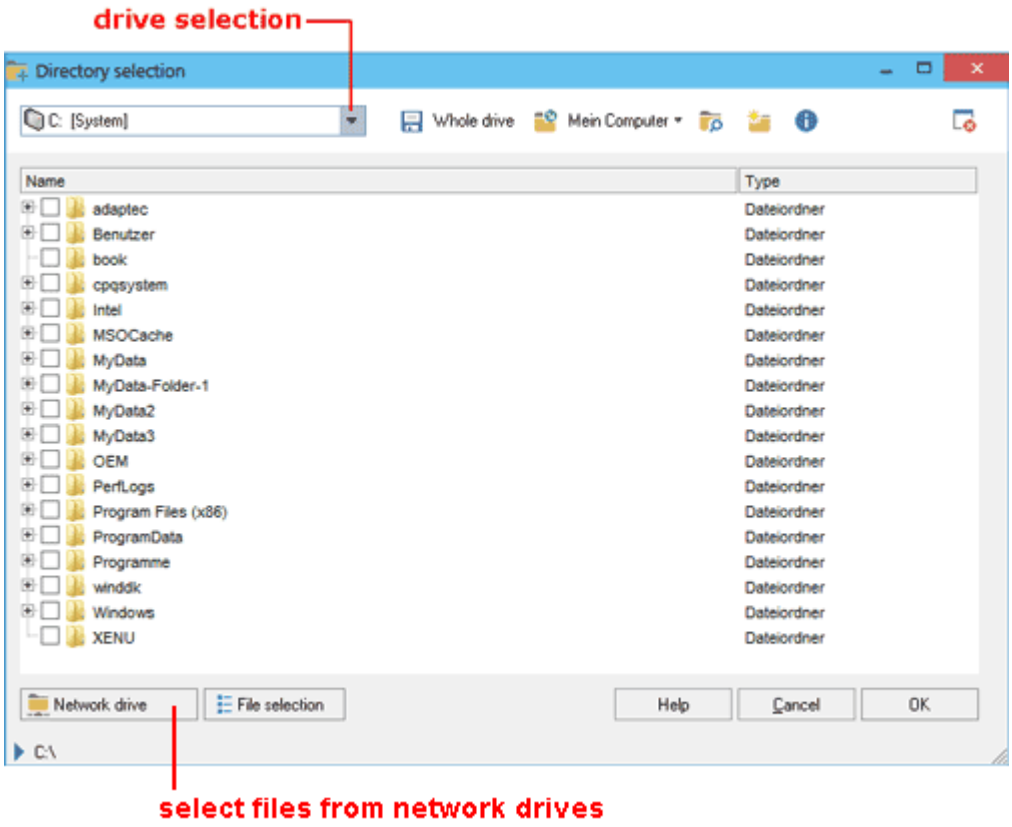
1.1.3.7.3. Files and Directories

Operation keys

F3 opens a windows to select an Iomega REV-LOADER medium.

F5 repaints the Z-DBackup window, this can be useful when working from a remote desktop connection.

Select backup source



Directory selection
Check the checkboxes next to the folders you want to include in this backup set.

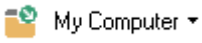
⚠ Depending on the system, the directory selection might show ZIP files as directories. Single files from these ZIP folders cannot be selected for a backup; instead, the whole ZIP archive must be selected!

Files selections
If you only want to backup selected files you can change to the files selections mode by using the button File selection . Check the checkboxes next to the files you want to include and confirm with OK . Z-DBackup works directory-oriented, avoid large lists of single files!

You can only include directories from one drive in a backup set.

If you have already selected a drive or files/folders on a drive for a Backup Set, the drive selection is disabled. If you want to backup directories from **multiple drives** in one backup process, you must create a Backup Set for each source drive and link the backup sets in the program settings (this way multiple Backup Sets can be combined to one backup task).

Whole drive	All files on the drive will be backed up. Note: This is NOT a system image backup and can't be used to restore the operating system. To create a system image backup please use the feature System Backup.



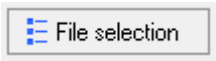
Navigate to a specific folder like *My Documents* or to a folder containing the user data of programs like Outlook, Chrome or Firefox. This option is deactivated if the backup set already includes files or folders from a different drive than the system drive (usually C:).

Opens the Windows folder search window as an alternative directory selection method.

Opens the preferences windows of the selected drive.

Deletes the current file/folder selection. (unchecks all checkboxes)

Opens a window to select a network drive.

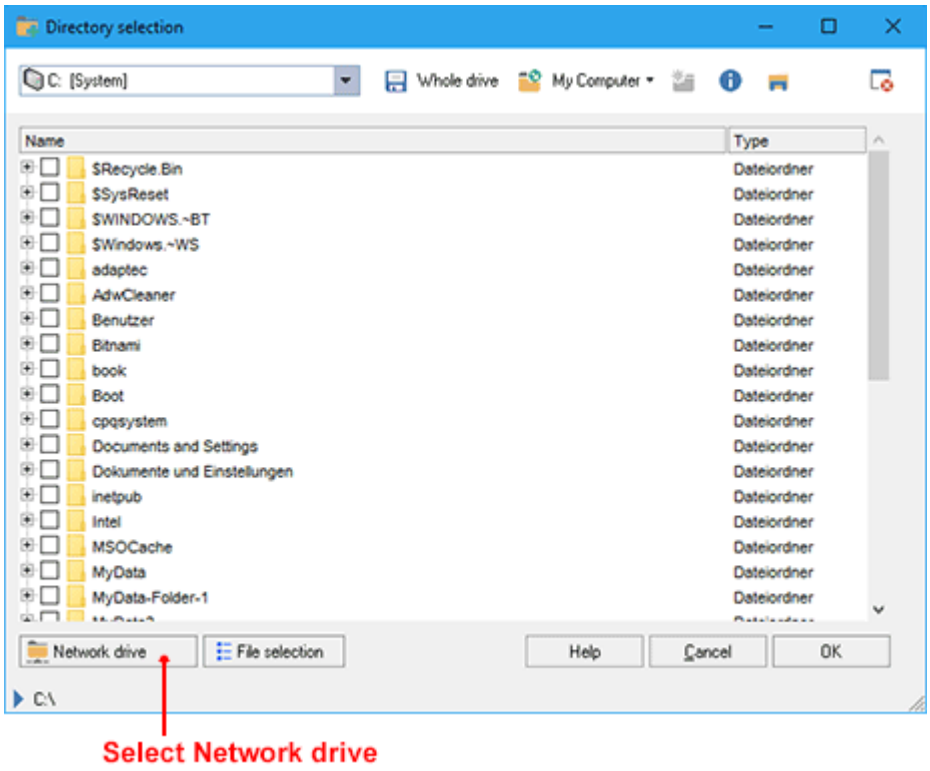


Switches between the file selection mode and the directory selection mode.

1.1.3.7.4. UNC Network Drives

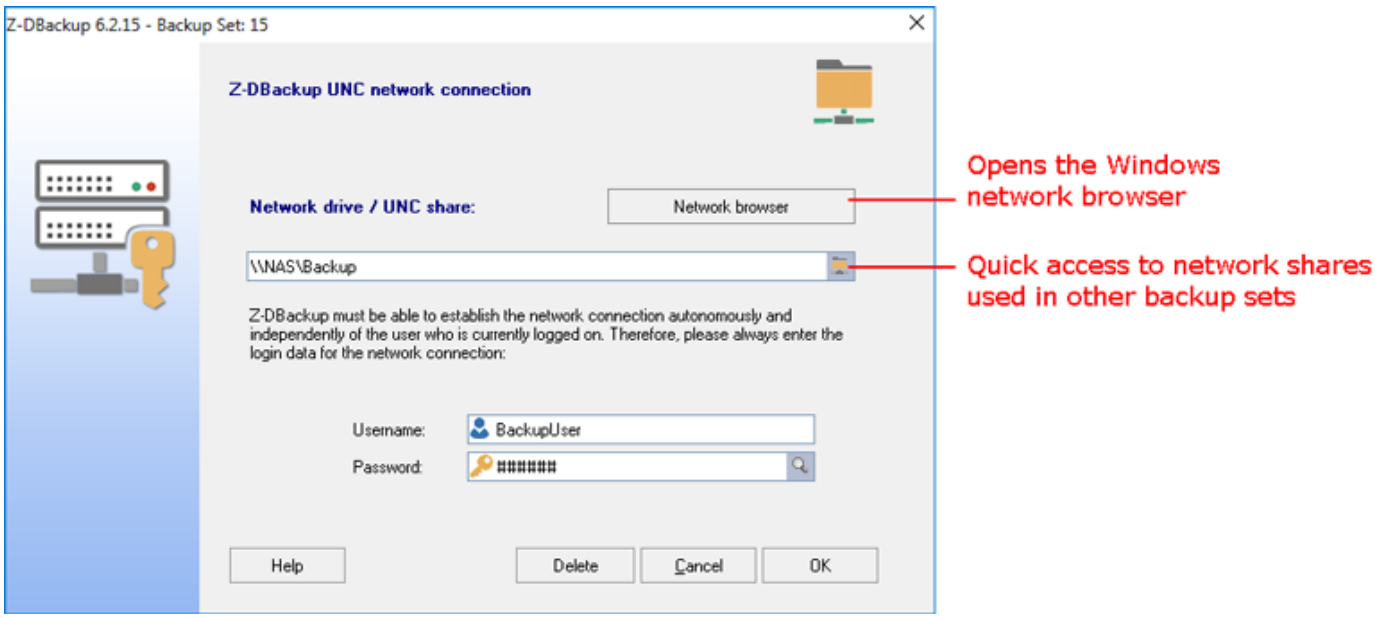
UNC is short for Universal Naming Convention. This is a standard system for naming network drives. Via a UNC path it is possible to access any resource in a network without a drive letter mapping.

Z-DBackup must be able to establish a network connection on its own and independently of the currently logged-on user and therefore uses UNC paths to access remote resources such as network drives.



Example

A directory called *Backup* is a shared resource on a NAS. A user account named *Backup* was created on the NAS and has the appropriate user permissions.



This button shows the stored password as normal text. If this button is not displayed, the option "Hide button to display passwords" was activated in the program settings.

The passwords for use with Z-DBackup can contain a maximum of 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***_ ! % / & ( ) ? . - ; + : @ * # [ ] { } € § \| ~ = $ "*** (no spaces). Please keep that in mind when creating the backup user account on your network computer.

1.1.3.7.5. Backup from NAS

Z-DBackup allows you to backup data stored on a NAS or other network share to a different backup medium like external USB or RDX drives.

Setup:

1. Create a new user on your NAS for the backup

You should create a new user on your NAS which is solely used to connect to the NAS to perform backups. Make sure that this user has the necessary rights to access the data you want to backup.
Z-DBackup must be able to establish a network connection on its own and independently of the currently logged-on user on your PC and therefore uses login data for your NAS. A connect to the NAS will be established right before the backup and disconnected right after.


The passwords for use with Z-DBackup can contain a maximum of 32 characters.

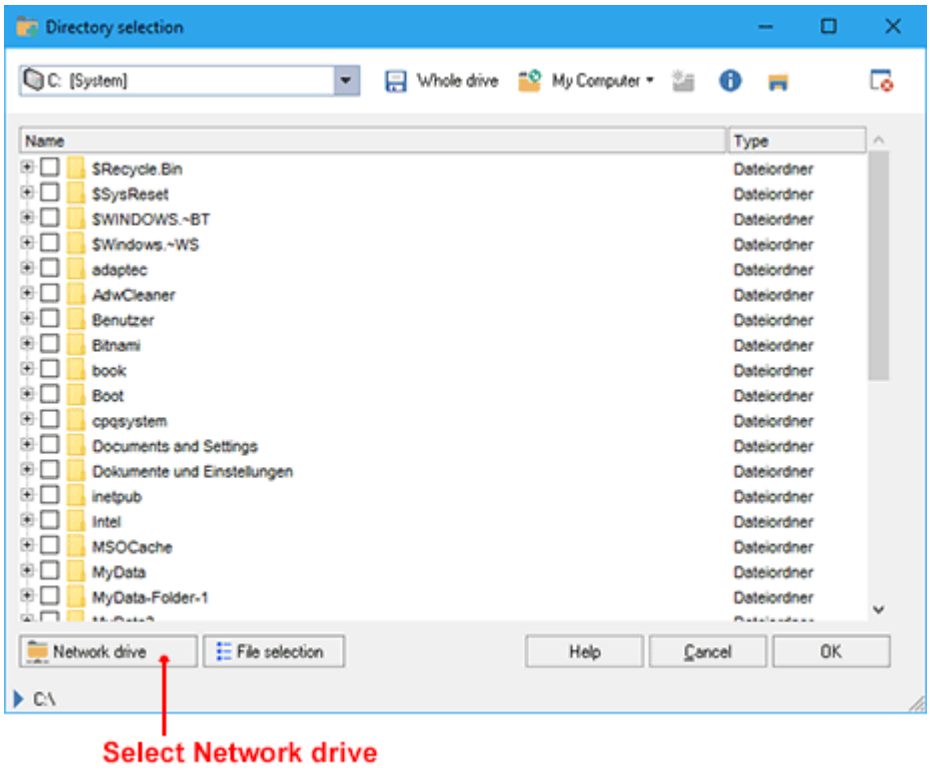
Allowed characters are: ***0-9, a-z, A-Z*** and the symbols _ ***! % / & ( ) ? . - ; + :*** @ **** # [ ] { } € § | ~ = $ "*** (no spaces). Please keep that in mind when creating the backup user account on your network computer.

2. Create a new Backup Set

Create a new Backup Set with the desired backup medium as target.

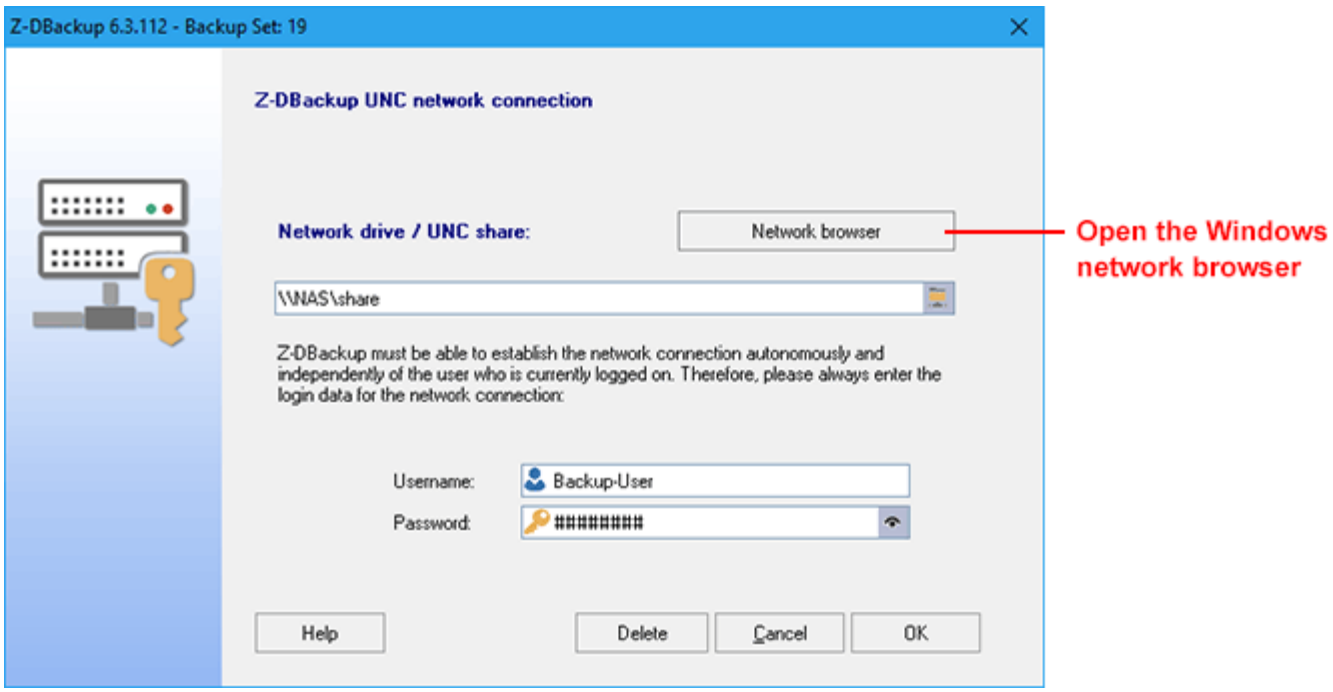
2.1 Source: Network drive

Click on *Network drive* in the source file picker window. Tab *Source -> Create / edit item -> Network drive*



2.2 Choose your NAS

Open the Network explorer and select the NAS or manually enter the UNC path of the network share.



Enter username and password of the newly created user on your NAS.

Example:
A directory called *share* is a shared resource on a NAS. A user account named *Backup-User* was created on the NAS and has the appropriate user permissions.
Choose the folder *share* on your NAS in the network browser. Enter username and password for *Backup-User*.

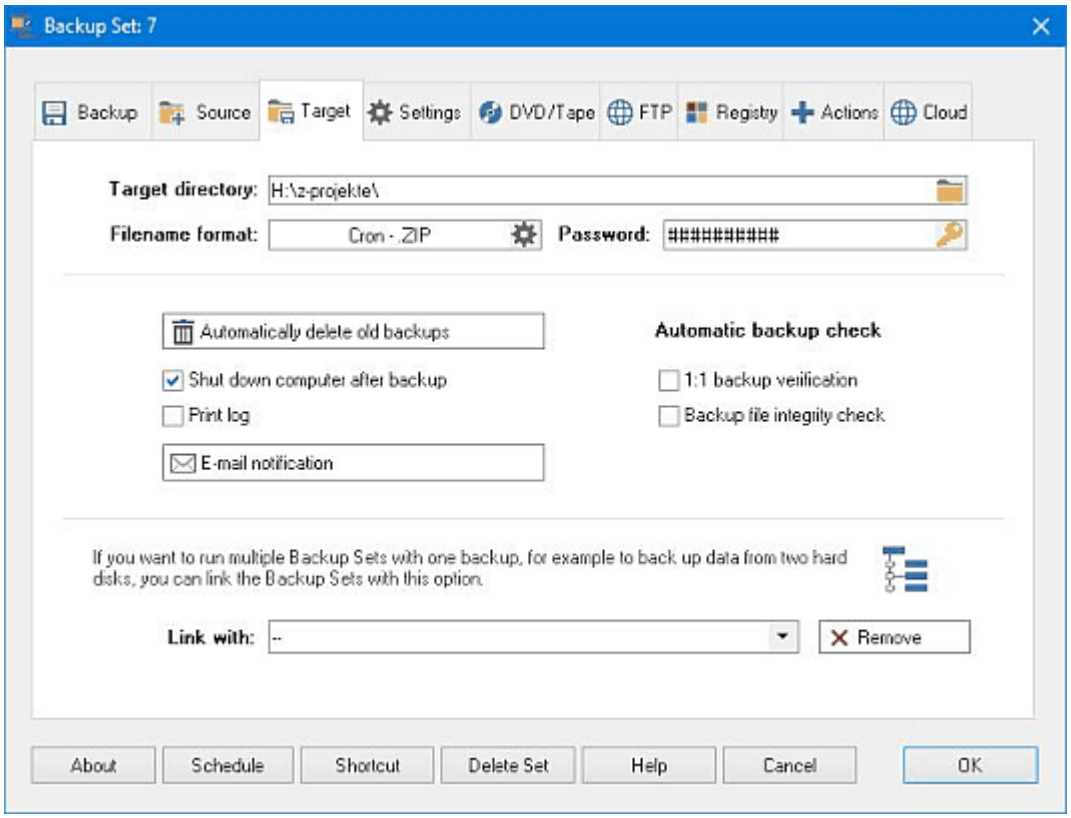
2.3 Select folders

Click OK and select the subfolders in your network share that you want to backup.

3. Choose a target
Choose a target and additional backup option like you would with any other Backup Set.

Your NAS backup is ready to be executed.

1.1.3.8. Backup Target - ZIP



Target directory

Use the button on the right end of the field to select the drive and directory where your backup should be stored. The selected path appears in the text field.

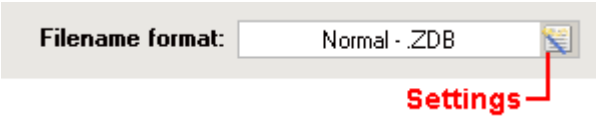
The backup target can be a removable medium, network drive, hard drive, etc.. The backup can then be automatically copied or moved to tape, CD, DVD or BluRay. Do not use the main directory, but instead create a subdirectory for each backup.

A direct backup to a disc medium is only possible with a UDF burner software (such as PacketCD, DirectCD, InCD, Instant-Burn) because only then the disc drive offers writing access just like any other drive with its drive letter.

In Windows Vista and later, you can use a UDF formatted DVD-RAM as a backup target without the need for additional software.

Archive Format/Backup Filename Extension

Windows recognizes files by their extension and will know, that *D01BACK.ZDB* is a backup file from Z-DBackup, because the extension **.ZDB** was registered for Z-DBackup at its installation. The backup file with extension **.ZDB** is created in the ZIP-Container format, containing a few adjustments for the needs of a backup. If you prefer to use the .zip extension or want to create a chronological backup, you can change this setting here.



Files created with Z-DBackup with the extension **.ZIP** are compatible with the standard ZIP format, which can be used with PKZIP 8.0, SecureZIP 8.0, WinZip 9.0, WinRAR and 7zip, and many more. You can thus quickly, directly and securely access the backup files even without Z-DBackup.

Password and Encryption

The encryption feature of Z-DBackup offers you a possibility to protect confidential documents in your backups from unauthorized access. The backup file is encrypted with a user-defined password. The professional version of Z-DBackup offers two different encryption methods for backup files which you can select with the selection button.

The password can be between one and 32 characters long. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***!%/&()?.-;+:***@*<># (no spaces). The password is case-sensitive; lowercase and uppercase letters are different.

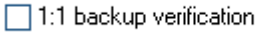
Generally, longer passwords (with eight or more characters) are more secure than shorter passwords, and passwords with letters and numbers are more secure than those which only consist of letters.

Write down your password carefully! Without the password, you will not be able to access or restore your backups.

Shutdown computer

Use this option if you want the computer to be shut down automatically after backup.

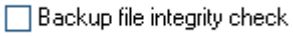
Automatic Backup Verification (Professional Version only)



This is a 1:1 comparison of the original data with the backup data. All files are compared.

With larger backups, it may happen that files are changed by a user or the system while the backup is still running. In this case, Z-DBackup would mark the backup as faulty.

Extended NTFS file information and NTFS permissions are not verified. Please regularly check the completeness and correctness of the backups!



Performs an integrity check of the created backup archive to ensure that it's internal structure is correct so that it can be restored.

Print Log File

Activate this option if the log file for the backup should be printed out automatically after backup.

E-Mail Notification

Z-DBackup can send e-mails to a user-defined e-mail address. This option is especially useful for system administrators who want to use Z-DBackup on remote servers and still be notified about all backup results. The mail contains the time, date and backup log file. You can configure the sender and recipient data in the program settings – e-mail settings.

Link with another backup set

If you want several backup sets to start directly after one another (as one job) e.g. to copy data from two different drives or partitions, you can link backup sets with this option. This link is a **forward link**, i.e. A link from the current backup set will point to the backup set selected here. The backup set you select here will be started automatically **after** the current backup set has finished its backup task.

You can only link one backup set with one other backup set directly, but you could link the second backup set to a third one and thus concatenate as many backup-sets as you have.

Example:
You have 4 Backup Sets: Backup Set 1 to Backup Set 4

You link **Backup Set 4** with **Backup Set 2** (in the Settings of **Backup Set 4**).

The link can be imagined like this: **Backup Set 4 --> Backup Set 2**

Now, when Backup Set 4 gets started, Backup Set 2 will start automatically after Backup Set 4 has finished.

You then link **Backup Set 2** with **Backup Set 3** (in the Settings of **Backup Set 2**)

The links between the 3 backup sets can be imagined like this: **Backup Set 4 --> Backup Set 2 --> Backup Set 3**

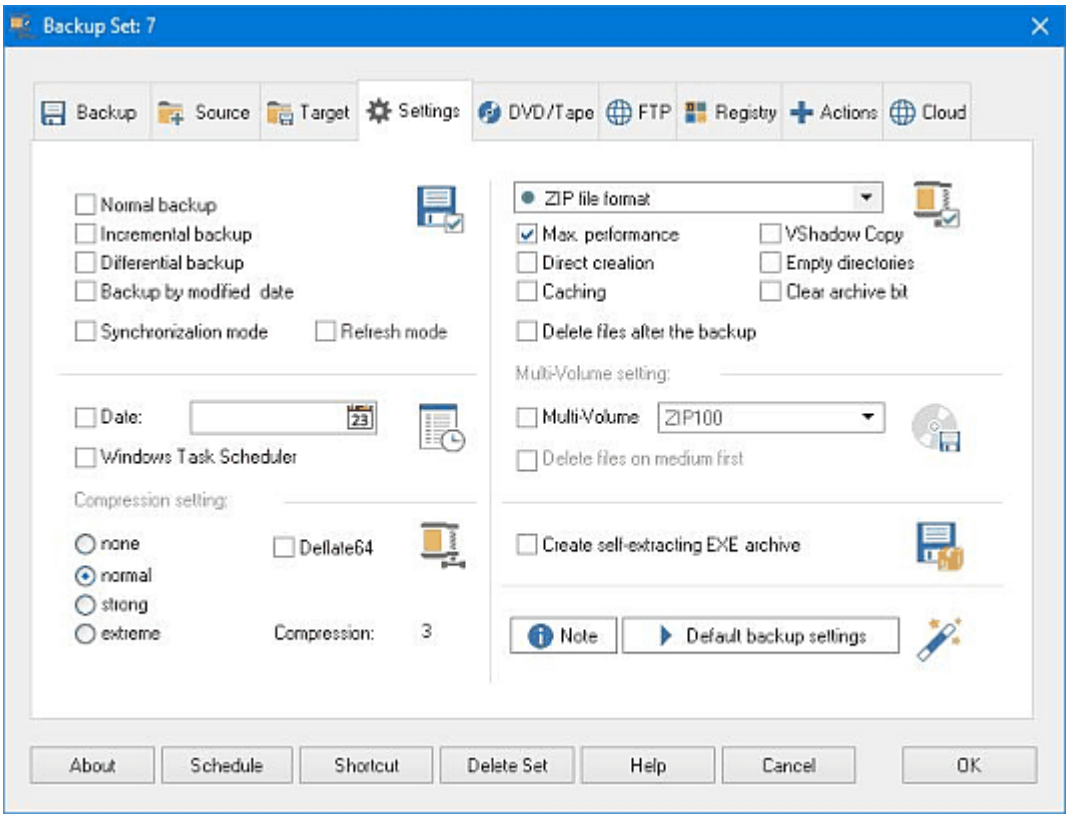
Now, when Backup Set 4 gets started, Backup Set 2 will start after Backup Set 4 hast finished and Backup Set 3 will start after Backup Set 2 hast finished.
Also, whenever Backup Set 2 gets started, Backup Set 3 will start automatically after Backup Set 2 has finished.

The shutdown option is disabled for linked backup sets because only the last backup set of one link chain can shut down the computer.

⚠ **In the freeware version it is not possible to batch-process linked backup sets, i.e. only the called backup set is processed!**

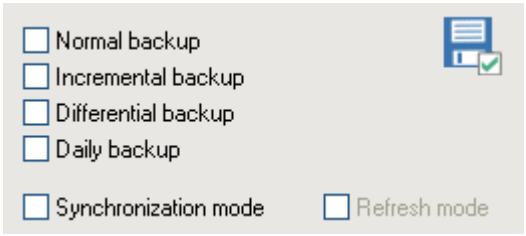
1.1.3.8.1. Settings - ZIP

Z-DBackup supports a variety of methods for tape backups. If you are not sure which settings lead to optimal results for you and you just want to create a backup of your data for the first time, you can simply skip these backup settings, because for a simple copy backup, none of the five backup methods must be activated in the setup! It is the default settings for a newly created backup set.



Copy Backup (default setting)

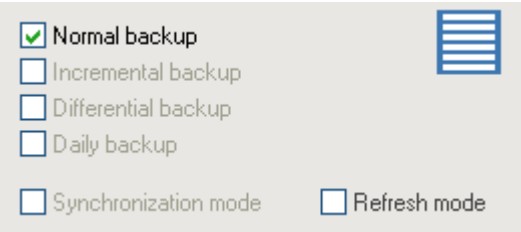
With a copy backup all selected directories are saved without marking the files as copied (the archive attribute remains unchanged). A possibly existing backup file is deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.



For a simple copy backup, none of the five different methods must be selected! This is the default setting after a new backup set has been created.

Normal Backup

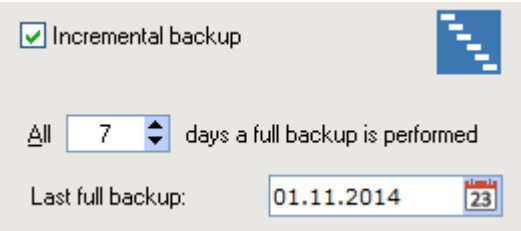
The normal backup is a copy backup with the additional feature that the archive attribute is reset/deactivated. A possibly existing backup file is deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.



Incremental Backup

A series of incremental backups starts with one full backup. During each following backup, only the files that were changed or have been created since the last (full or incremental) backup will be backed up.

All backed up files are marked, i.e. the archive attribute is deactivated. Whether a file has to be backed up during a certain incremental backup is determined by the **archive attribute** of that file.
With this backup method, you need the most recent full backup and all following incremental backups to restore all your files.



If you want to use an incremental backup set for full backups, you can simply create an additional desktop shortcut or Z-Cron job with the action "Full incremental backup"!

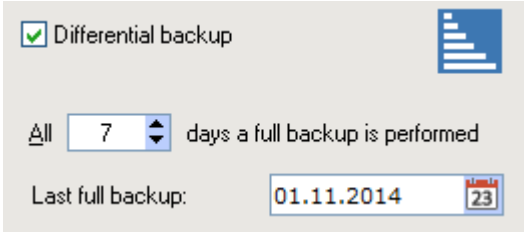
Uncheck this option to get back to the list of all backup options.

Differential Backup

A series of differential backups starts with one full backup. During each following backup, only the files that were changed or have been created since the last full backup will be backed up.

The archive attribute of backed up files is deactivated during full backups, but not during any following differential backups. Whether a file has to be backed up during a certain differential backup is determined by the **archive attribute** of that file.
With this backup method, you need the most recent full backup and only the latest differential backup to restore

all your files.

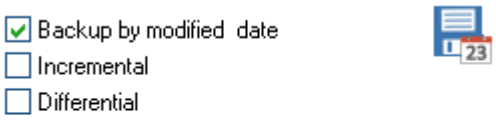


If you want to use a differential backup set for full backups, you can simply create an additional desktop shortcut or Z-Cron job with the action "Full differential backup"!

Uncheck this option to get back to the list of all backup options.

Backup by modification date

With this backup method, only files that were changed or created on the day that the backup is run are copied. The files are not marked as copied, i.e. the archive attribute remains unchanged. This option also allows to perform an incremental or differential backup using the 'last modified' date of the files. This is useful when archive attributes are not supported (e.g. some NAS or Linux systems).

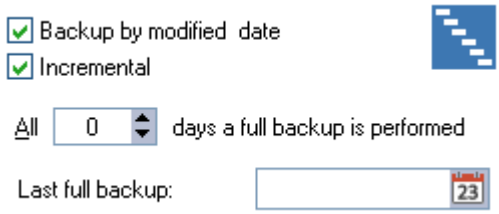


Uncheck this option to get back to the list of all backup options.

Incremental Backup by modification date

A series of incremental backups starts with one full backup. During each following backup, only the files that were changed or have been created since the last (full or incremental) backup will be backed up.

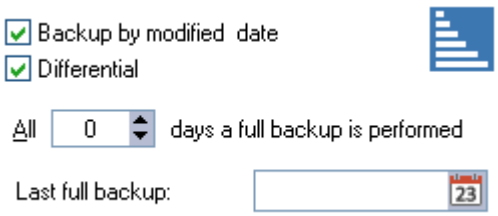
The files are NOT marked as backed up, i.e. the archive attribute remains unchanged. Whether a file has to be backed up during a certain incremental backup is determined by the **modification date** of that file.
This option allows you to perform an incremental backup using the 'last modified' date of the files. This is useful when archive attributes are not supported (e.g. some NAS or Linux systems).



Differential Backup by modification date

A series of differential backups starts with one full backup. During each following backup, only the files that were changed or have been created since the last full backup will be backed up.

The files are NOT marked as copied, i.e. the archive attribute remains unchanged. Whether a file has to be backed up during a certain differential backup is determined by the **modification date** of that file.
This option allows you to perform a differential backup using the 'last modified' date of the files. This is useful when archive attributes are not supported (e.g. some NAS or Linux systems).



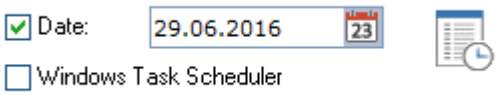
Special Options for Existing Backup Archives (Data Archiving)

Synchronize Mode
If this option is activated, only those files are copied which are new or newer than those present in the backup archive. The reference point is an existing backup file. If no backup file is found, all files are copied and a new backup file is created. In contrast to the refresh mode, new files are added to an existing backup archive.

Refresh Mode
This special option can be used to refresh existing backup archives. If this option is activated, only files that are newer than those in an existing backup archive are copied. The reference point is an existing backup file. Only files that are already present in the backup file are copied. This option should only be selected if the same backup set was used to create a full copy backup before and the backup archive still exists in the target directory.

These two option cannot be used with multi-spanning. If you want to synchronize two computers via a removable medium, you must disable multi-spanning for this backup.

Backup files newer than...
Select this option if you only want to back up data from after a specific date. The date must be entered in the format "DD.MM.YYYY" and must be between 1987 and 2076.

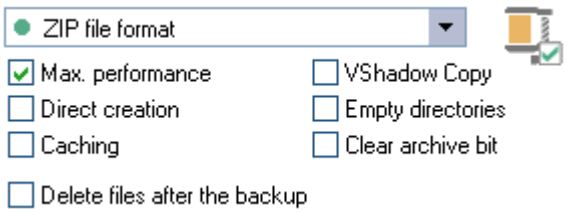


Windows Task Scheduler
For each backup set, you can choose to create a task for Z-Cron or the Windows Task Scheduler. Select this option if you want to use Windows Task Scheduler for scheduling your backups.

Compression Settings
Z-DBackup uses *Zip Express Technology™* for compressing its backup files. This technology is compatible with the PKZIP 4.5 format. You can specify if and how to compress the backup. Compression makes it possible, for example, that 400 MB of text files can be copied to a 100 MB ZIP medium. The Deflate64 compression can optionally be enabled in the professional version.

If you select the options "extreme" and Deflate64, Z-DBackup will try to recompress files even if they are already compressed. In that case, the setting in the program setup will be ignored!

Execution Options

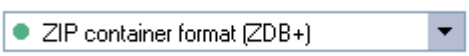


ZIP file format

Backup creation for up to 350,000 files (ZIP and ZDB). If this option is activated, Z-DBackup will also try to copy open or locked files (open shared files) and reports these files in the log file. If Z-VSScopy is not installed, any files that are locked or opened by another application (FileLock) are recognized during backup and are skipped and also reported with an entry in the log file.

The option **ZIP file format** is also perfectly suited for backups to external (e.g. USB) hard drives and NAS.

ZIP container format (ZDB+)

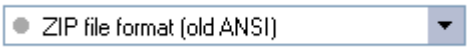


The ZDB+ format supports archives with up to 1,000,000 files. The new version of the ZDB file format called ZDB+ still uses the ZIP container format to store data but extends the standard ZIP format with own features

and is thus not compatible to most ZIP programs. Z-DBackup will also try to copy open or locked files (open shared files) and reports these files in the log file. If Z-VSScopy is not installed, any files that are locked or opened by another application (FileLock) are recognized during backup and are skipped and also reported with an entry in the log file.

If backup archive encryption is enabled and you're using the ZDP+ format, file names will also be encrypted and cannot be seen when opening the file with another program.

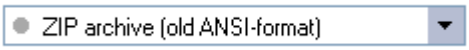
ZIP file format (old ANSI)



Creates archivs in the ZIP file format using ANSI encoded string. Supports backups of up to 500,000 files, optionally with multi-spanning. The files that should be copied may not be locked or opened by another application during the backup.

New backup jobs should not use this option. This deprecated file format version is only supported for backward compatibility reasons and will be removed in future versions of Z-DBackup.

ZIP archive (old ANSI)



Creates archivs in the ZIP file format using ANSI encoded string. Supports backups of up to 500,000 files, optionally with multi-spanning for single directories. The files that should be copied may not be locked or opened by another application during the backup. This setting is intended for archiving of data and is not suitable for daily backups. Filter options are not supported with this backup method.

New backup jobs should not use this option. This deprecated file format version is only supported for backward compatibility reasons and will be removed in future versions of Z-DBackup.

Maximum Performance
Deactivate this option to prevent Z-DBackup from sending data faster than the target drive can process them. This is useful for slow components, such as USB or network drives, and can prevent Z-DBackup from freezing periodically or aborting backup processes to slow drives. You can specify a delay time from 0 to 10 ms in the program setup.

Direct Creation
The files are written to the backup archive directly. This setting does nothing if multi-spanning is enabled. For network backups, this settings can often help to improve the performance of Z-DBackup.

Caching
The backup is first created in the working directory and then copied to the backup medium. This option is only advisable for special cases. Make sure that enough free disk space is at hand and you have the necessary user rights. Z-DBackup needs read and write permissions for the working directory.

VShadow Copy
If this option is activated, a Volume Shadow Copy is created for the source drive. This allows copying locked files.

Z-VSScopy is contained in the Freeware Version of Z-DBackup and is itself freeware for private use. If you want to use Z-VSScopy with the Professional Version of Z-DBackup, you need to purchase a license.

Empty directories
Include empty directories in the backup. This can be useful if you want to be able to restore the complete

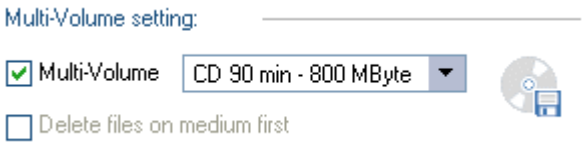
directory structure including empty directories.

Clear Archive Attribute
The archive attribute of the source files is cleared/deactivated after backup.

Delete files after backup
If you want to archive old or unused data, you can use this option. The source files are deleted during backup! Only use this option if you want to archive old data and at the same time remove it from your hard drive.

Multi-Volume Settings

Select this option if you want to create multi-volume archives on your hard drive, for example to copy them manually or automatically (with Z-DataBurn of Z-DataBurn) to multiple CDs/DVDs/Blu-Rays. This option must also be enabled if you want to create a backup larger than 2 GB/4 GB to hard drives with FAT or FAT32.



Clear medium prior to backup
If you want to create the backup on a removable medium (e.g. a ZIP drive), the option "Multi-Volume to HD" is disabled. The backup will automatically be written to multiple mediums, depending on the size. Removable mediums can be cleared/erased automatically by Z-DBackup before data is copied to them.

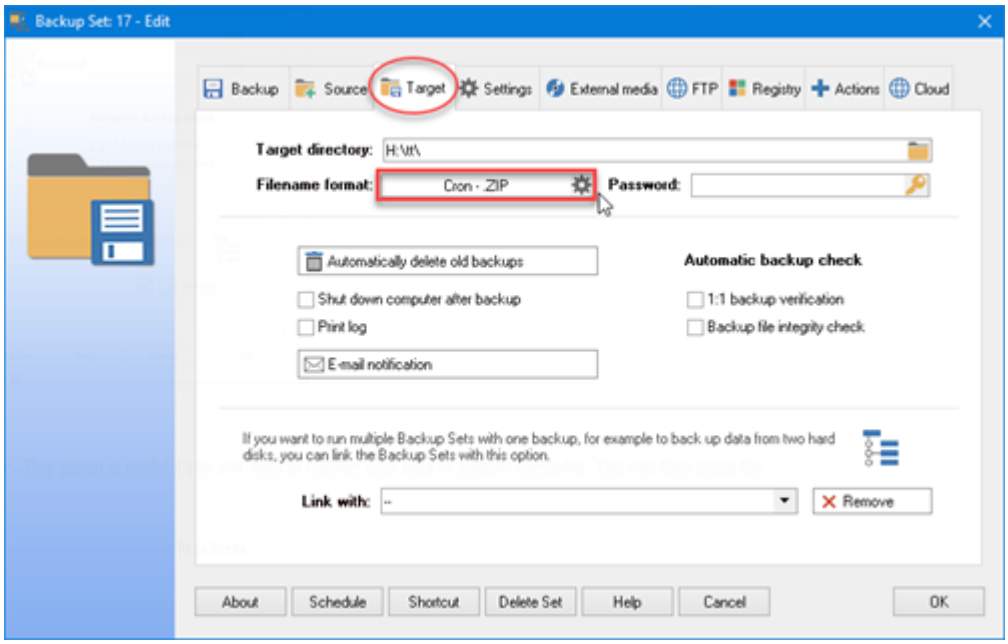
Create self-extracting EXE archive

If this option is selected, the backup file is created as a self-extracting EXE archive instead of a ZIP file. Due to limitations in the SFX technology (PKZIP 2.04g), the maximum archive size is limited to 2048 MB (2 GB). AES encryption and Deflated64 compression are not supported.

Without the module Z-VSScopy, Z-DBackup cannot copy files that are locked by other applications!

1.1.3.8.2. Create ZIP File

Windows recognizes files by their extension. For example, your Windows knows that *D01BACK.ZDB* is a Z-DBackup file because the extension **.ZDB** was registered for Z-DBackup during installation. If you prefer to use the extension **.ZIP** for your backup files, you can change the setting with the archive format button in the settings of your backup set:



Backup files are created in the PKZIP format. This option is useful if you just want to transfer your data to another computer. You can then unzip the archive without Z-DBackup.

1.1.3.8.3. Archive Format

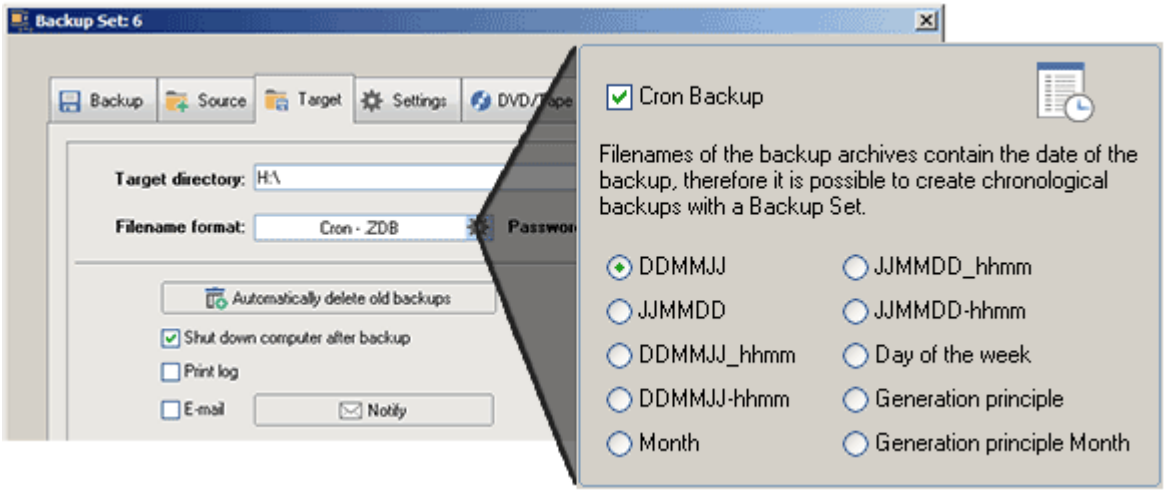
The file name of the backup set contains the date of the backup which enables chronological backups or backups using the generation principle with one backup set, e.g.:

Backup set 1

D01080130.ZDB Backup from 2008-01-30
D01080131.ZDB Backup from 2008-01-31

If the user has specified a differential or incremental backup, this option is automatically activated by Z-DBackup and the file name format is set to JJMMDD-hhmm! (In the freeware version of Z-DBackup, the file name format is DDMMJJ_hhmm).

In the freeware version of Z-DBackup only the first three options are available.



Weekday

The backup archives are named after the day of the week and get overwritten in the following week. You can thus access all data from the last week.

Generation principle

1st week	MON	TUE	WED	THU	Friday01
2nd week	MON	TUE	WED	THU	Friday02
3rd week	MON	TUE	WED	THU	Friday03
4th week	MON	TUE	WED	THU	Friday04

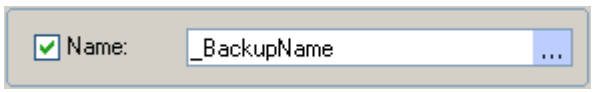
52nd week	MON	TUE	WED	THU	Friday52

The MON - THU backup archives are overwritten in the following week, the Friday archives only every 52 weeks. You can therefore access all data from one year.

The generation principle only works with the backup method copy backup. If the generation principle should be restricted to one month, older backup files can be automatically deleted by Z-DBackup. This setting is not necessary for the REV™- Loaders 280/560. The control of the Iomega® REV™-Loaders 280/560 works through entries in the action list prior to and after the backup.

Generation principle Month
Like *Generation principle* but the Friday archives get overwritten after one month.
The MON - THU backup archives get overwritten every week and the Friday archives every 4 weeks.
You have thus always access to daily backups of last week and the weekly backups of the last 4 weeks.

Custom file name for backup archives



The word entered here will be used in the file name after the number of the backup set.
e.g. when "_BackupName" is entered and the file format ZDB chosen for backup set no. 3, the file name of the backup archive created is going to be "D03_BackupName.zdb".

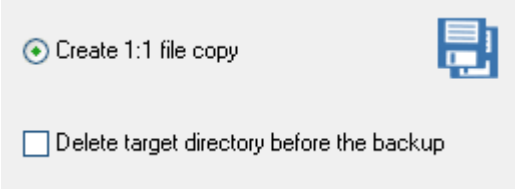
Create .ZIP archive
Archives are not created in unknown, cryptic formats. The Z-DBackup archive format is compatible with the most recent standard ZIP format. You can thus quickly, directly and securely access the backup files even without Z-DBackup.

The backup file is created in the ZIP format. This option makes sense if, for example, you want to use your archive on another computer or just transport your data.

Create .ZDB archive

The backup file is created in the ZIP-Container format, with the extension **.ZDB**. Windows recognizes files by their extension and will know, for example, that *D01BACK.ZDB* is a backup file from Z-DBackup, because the extension **.ZDB** was registered for Z-DBackup at its installation.

Create 1:1 Copy
This option is activated if you selected 1:1 Copy in the "Backup" tab before.

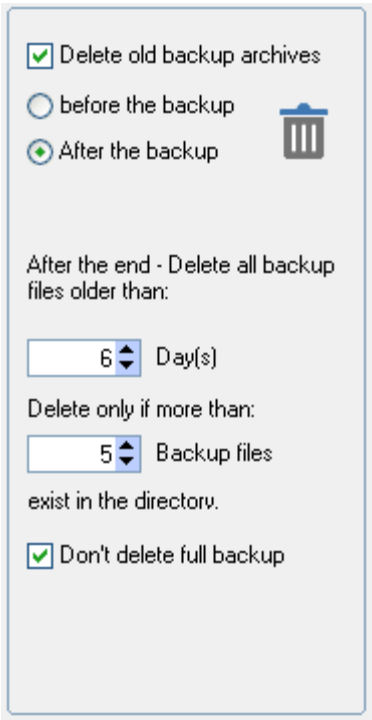


Delete Target Directory before Backup
If this option is activated, the target directory is deleted before the backup.

Deleting the target directory is only possible with 1:1 copies!

Automatically delete old backups (not available in the freeware version)
If chronological backups are activated, e.g. with differential or incremental backups, Z-DBackup can automatically delete old backup files. It can delete files depending on their age (in days) or the number of files in the backup folder, or a combination of the two.

For a differential weekday backup (5 days) a suitable setting would be:

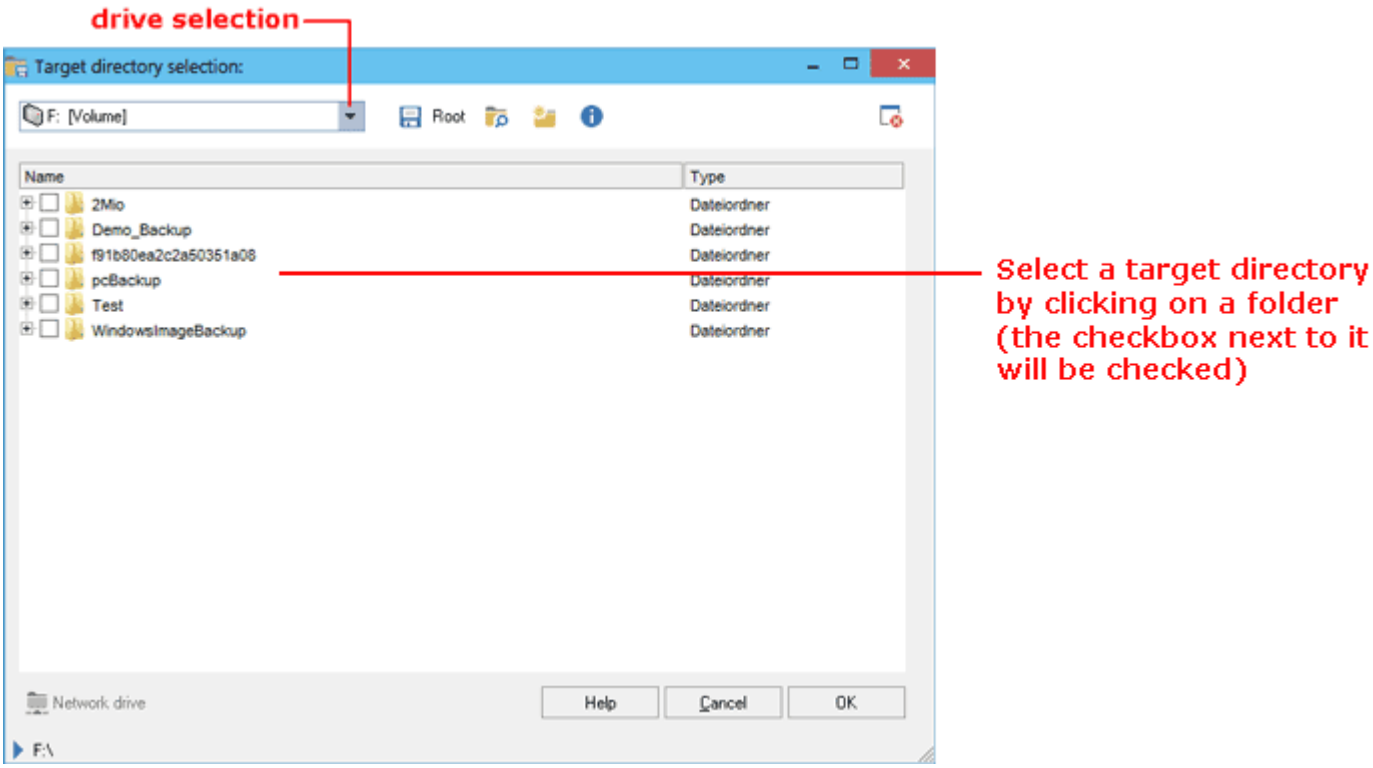


Do not delete full backup (not available in the freeware version)

If this option is activated, the last differential (or incremental) full backup is not deleted. Point of reference is the date of the last full backup, i.e. all backups that were created on the same day as the last full backup will not be deleted automatically.

1.1.3.8.4. Directory Selection

Select target directory



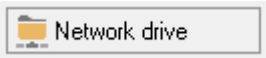
Select a target directory by checking the checkbox next to the desired directory.
The selected directory is shown in the status bar. You can save your selection and close the window by clicking OK.

Drive selection
Only drives that correspond to the prior selected backup medium are shown.
All connected drives are only displayed if *Manual Selection* was selected as backup medium. In this case, network drives have to be selected by using the *Network drive* button.

Root	Selects the root directory as the target directory.
	Opens the Windows folder search window as an alternative directory selection method.
	Creates a new folder.

Opens the preferences windows of the selected drive.

Deletes the current file/folder selection. (unchecks all checkboxes)

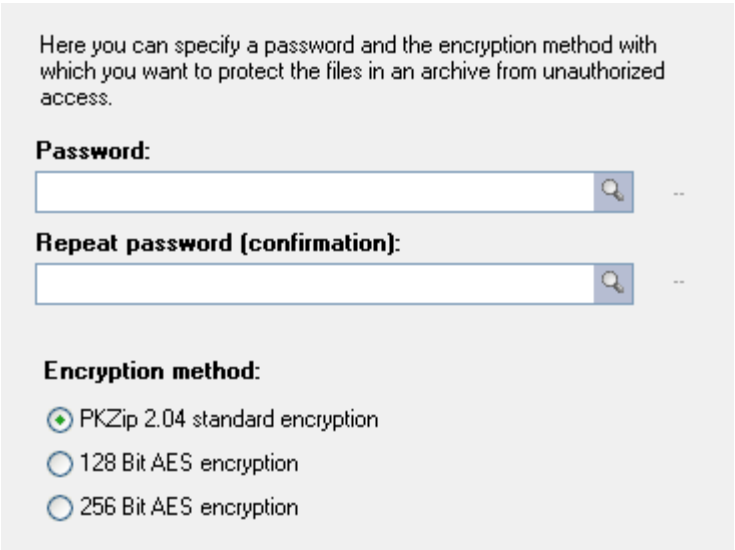


Opens a window to select a network drive.

1.1.3.8.5. Archive Password

Encryption

The encryption feature of Z-DBackup gives you the possibility to protect confidential documents in your archives against access by unauthorized persons. The backup which you want to protect is encryption by Z-DBackup with a user-specified password. The original content of encrypted files can then only be retrieved after entering the valid password. In this dialog window, you can specify your desired password with which the backup archive will be protected. If an archive is encrypted, only the table of contents of this archive can be viewed without the password. The files inside the archive can be neither viewed nor extracted without the password.



This button shows the stored password as normal text. If this button is not displayed, the option "Hide button to display passwords" was activated in the program settings.

The password can contain one to 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***?.-;+:@*<>#*** (no spaces). Please note that passwords are case-sensitive, i.e. upper-case and lower-case letters are different. Generally, longer passwords (with eight or more characters) are more secure than shorter passwords, and passwords containing letters and numbers are more secure than those containing only letters or only numbers.

Encryption method

The professional version of Z-DBackup offers two encryption methods for backup files:

- **AES encryption**

TThe Advanced Encryption Standard (AES) is the result of a three-year public tender of the US standardization authority NIST (National Institute of Standards), after which the so-called Rijndael encryption method was introduced as the Federal Information Processing Standard.

Z-DBackup supports AES encryption on two different levels of security: 128 bit and 256 bit AES. These bit values are the sizes of the key that is used to encrypt the data. The 256 bit AES encryption is more secure than the 128 bit AES encryption, but both of them offer a much higher security than the traditional PKZIP 2.04 standard method. An advantage of the 128 bit AES encryption is that it takes a little less time to encrpyt and decrypt a file.

The safety of your data does not only depend on the efficiency of the encryption method, but also on your password. The length and composition of the password play a role here, as do the measures that you take to keep it secret from unauthorized persons.

Please note that the extension of the ZIP format that is used for saving AES encrypted files is not supported by older ZIP programs, and that AES encrypted ZIP files can not yet be handled by most other compression programs.

- **PKZIP 2.04 standard encryption**

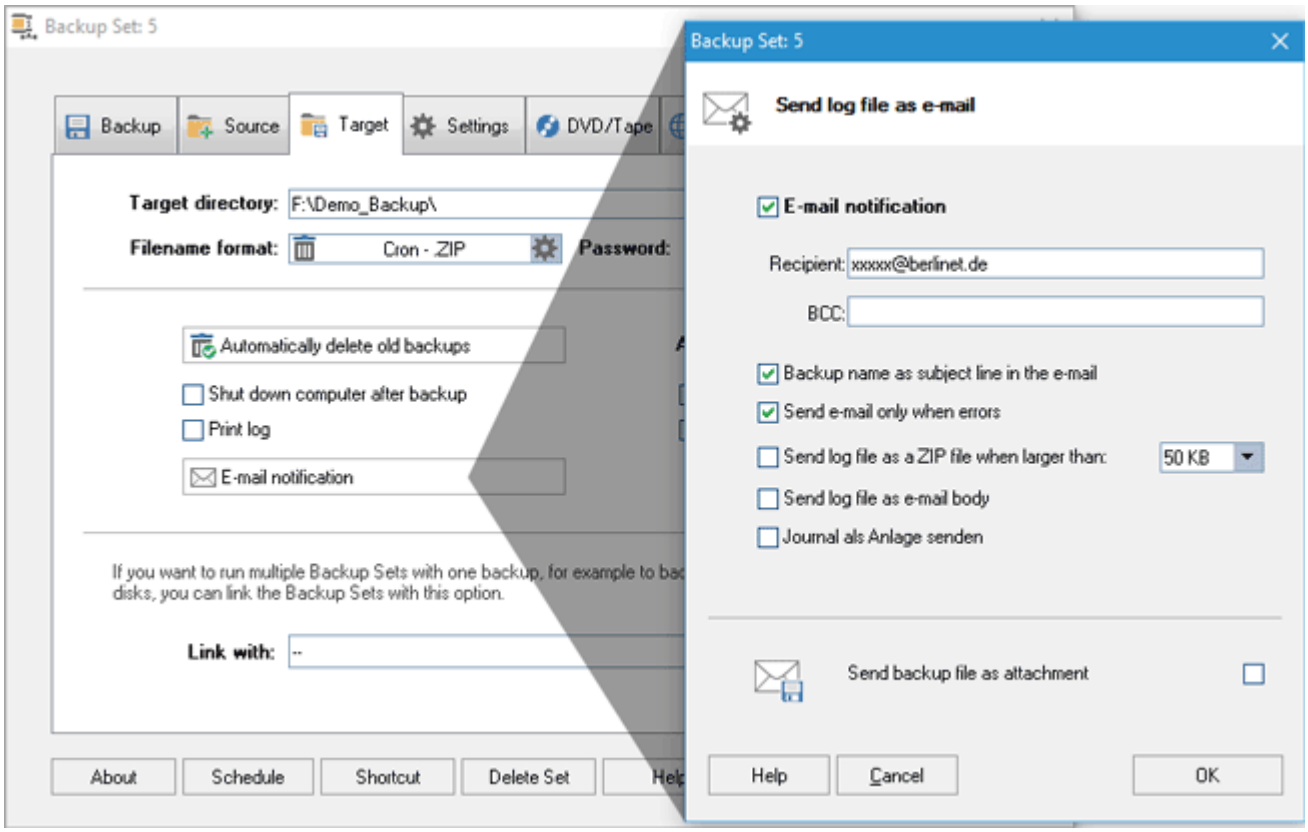
This older encryption method provides some protection against access by unauthorized persons, because the files contained in an archive that is encrypted with this method can only be extracted after the password has been entered. However, the PKZIP 2.04 encryption format is rather insecure and will not withstand a deliberate attack with specialised tools for password detection.

The PKZIP 2.04 encryption does not suffice to protect really confidential data in an adequate way.

If your data demands for a high level of security, you should use the AES encryption feature of the Z-DBackup professional version.

1.1.3.8.6. Send E-Mail

Z-DBackup offers the possibility to automatically send an e-mail to a specified mail address. This feature can be used by administrators who, for example, run Z-DBackup on servers and want to be notified about backup processes in absence. The e-mail contains date, time and log file of the backup. The sender and mail server settings are configured in the program setup.



Enter the recipient's e-mail address. Multiple addresses can be separated with a comma. You can also use the **BCC field** for blind copies.

Recipient e-mail address

An email adress is a unique description for a message recipient which allows for sending mails to this recipient. The email adresses used for sending via SMTP over the internet consist of two parts: a local part and a global part, also called domain-part. Both parts are separated by an @ sign (AT sign). For example, in the e-mail address *service@itcompany.com*, 'service' is the local part and 'itcompany.com' is the domain-part.

Backup name as e-mail subject

If this option is deactivated, only the backup set number is written in the e-mail subject line.

Send e-mail on error only

If this option is activated, the e-mail is only sent if there was an error during the backup.

Send log file as ZIP file when larger than XX KB

If this option is activated, the log file is automatically zipped if it is larger than the specified size

Send log file as e-mail body

Insert log file as e-mail text.

Send backup file as attachment

The backup file can optionally be attached to the e-mail, but this feature should only be used for small archives (< 1 GB). Also look for the limit of your e-mail provider.

1.1.3.9. Backup Target - COPY

Target directory
Use the "Choose directory" button to select the drive and directory in which the backup should be created. After you have chosen a directory, the path will appear in the text field.

The backup target can be a removable medium, network drive, external hard drive or local drive. From there, the backup can optionally be automatically copied or moved to tape, CD, DVD or Blu-Ray. The drives you can select in the dialog depend on the chosen backup medium.

Subdirectory
With this setting it is possible to enhance the target directory name with the date and time or weekday.

Security

The backup settings can optionally be protected with a password.

The password can contain one to 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***!%/&()?.-;+:***@*<>#. The password is case-sensitive, i.e. upper- and lowercase letters are different. Generally, longer passwords (eight or more characters) are more secure than shorter passwords, and password containing letters and numbers are more secure than those containing only letters or only numbers.

Shut Down Computer

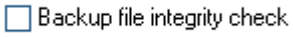
Select this option it your computer should be automatically shut down after backup.

Autmatical Backup Verification (only in the professional version)

If the backup should automatically be verified after creation, this option should be selected.

1:1 comparison between source data and backup data. The content of all copied files is compared to the content of the original files. But note: With larger backups or network backups, it is possible that some files are altered by the system or another user even during backup! In this case, the verification fails and Z-DBackup marks the backup as faulty, even though the backup process was in fact successful.

⚠ Extended NTFS file information and security settings are not taken into account during verification! Please regularly check the functionality and completeness of your backups!



Checks that all files source files of the backup are present in the target directory and that their size and last modificaton date are equivalent.

Print Protocol

Select this option if the protocoll should be printed after backup.

E-mail Notification

Z-DBackup offers the possibility to automatically send an e-mail to s specified address. This feature can be used by administrators who want to run Z-DBackup on servers and want to be informed about the result of automatic backups, even if they are absent. The e-mail message contains the time and date and the log file of the backup. The configuration of sender and recipient is done in the program setup – E-mail server settings.

Linked Backup Sets – Batch Automation

If you want to start several backup sets as one job, e.g. copy data from two different drives or partitions, you can link backup sets with this option. This link is a **forward link**, i.e. A link from the current backup set will point to the backup set selected here. The backup set you select here will be started automatically **after** the current backup set has finished its backup task.

You can only link one backup set with one other backup set directly, but you could link the second backup set to a third one and thus concatenate as many backup-sets as you have.

Example:
You have 4 Backup Sets: Backup Set 1 to Backup Set 4 and what to them to be executed in the following order: **Backup Set 4, Backup Set 2, Backup Set 3**

The shutdown option is disabled for linked backup sets because only the last backup set of one link chain can shut down the computer.

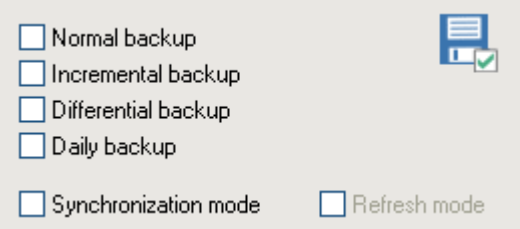
⚠ **In the freeware version it is not possible to batch-process linked backup sets, i.e. only the called backup set is processed!**

1.1.3.9.1. Settings - Copy

Z-DBackup supports various methods for a 1:1 file backup of your data on the computer or in a network. If you are not sure which of the settings you should activate for optimal results and you just want to create a copy of your data in another location, then you can simply skip the following backup settings, because for a simple copy backup, none of the five different methods must be selected! This is the default setting after a new backup set has been created.

Copy Backup (default setting)

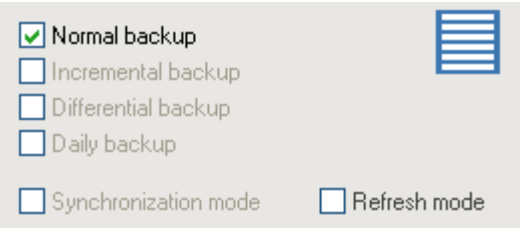
With a copy backup all selected directories are saved without marking the files as copied (the archive attribute remains unchanged). A possibly existing backup file is deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.



For a simple copy backup, none of the five different methods must be selected! This is the default setting after a new backup set has been created.

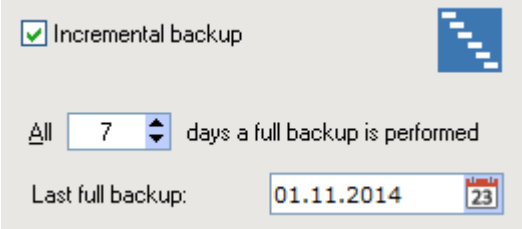
Normal Backup

The normal backup is a copy backup with the additional feature that the archive attribute is reset/deactivated. A possibly existing backup file is deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.



Incremental Backup

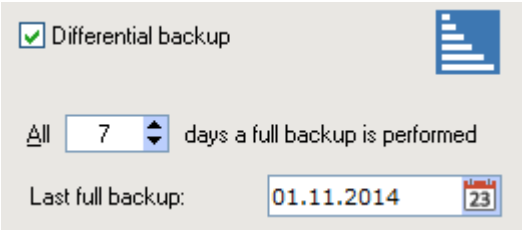
A series of incremental backups starts with one full backup. At each following backup, only those files that were changed or have been created since the last (full or incremental) backup will be copied. All copied files are marked, i.e. the archive attribute is deactivated. With this backup method, you need the most recent full backup and all following incremental backups to restore all your files.



If you want to use an incremental backup set for full backups, you can simply create an additional desktop shortcut or Z-Cron job with the action "Full incremental backup"!

Differential Backup

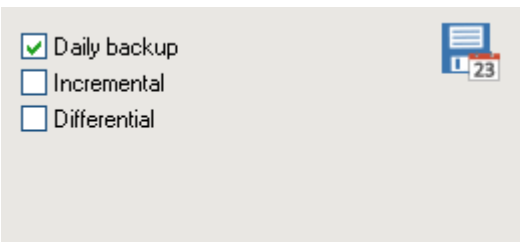
A series of differential backups starts with one full backup. At each following backup, only those files that were changed or have been created since the last full backup will be copied. The archive attribute of copied files is deactivated during full backups, but not during any following differential backups. With this backup method, you need the most recent full backup and only the latest differential backup to restore all your files.



If you want to use a differential backup set for full backups, you can simply create an additional desktop shortcut or Z-Cron job with the action "Full differential backup"!

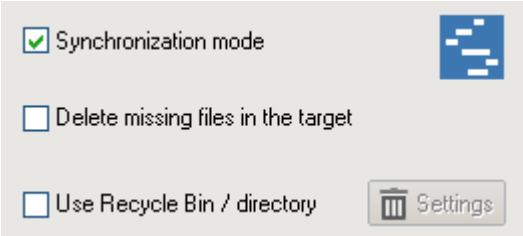
Daily Backup Incremental/Differential by date

With this backup method, only files that were changed or created on the day that the backup is run are copied. The files are not marked as copied, i.e. the archive attribute remains unchanged.
This option also allows to perform an incremental or differential backup using the 'last modified' date of the files. This is useful when archive attributes are not supported (e.g. some NAS or Linux systems).



Synchronization Mode

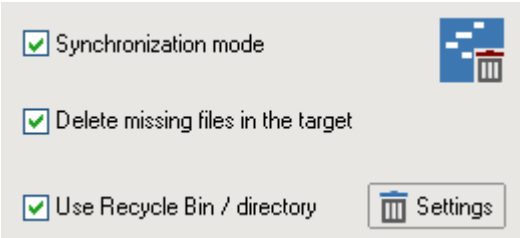
If this option is activated, only those files are copied which are new or newer than those present in the backup directory. The reference point is an existing backup file. If no backup file is found, the original file is copied.



Synchronization Mode - Delete missing files in the target directory

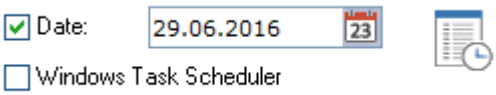
Like Synchronization mode, but files and directories will be **deleted** from the target directory if they no longer exist in the source directory.

Before files get delete a dialog appears and you can choose to delete the listed files.
You can deactivate this dialog by activating ***Use Recycle Bin / directory*** and choosing the apropriate setting in the configuration window.



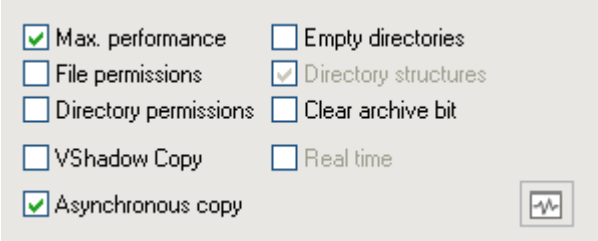
Use Recycle Bin / directory
You can specify what Z-DBackup should do with files that will be deleted or overwritten during synchonisation. If this option is activated, Z-DBackup will copy those files to the recycle bin or to a given folder. The Settings button opens a configuration window.

Backup files newer than...
Select this option if you only want to back up data from after a specific date. The date must be entered in the format "DD.MM.YYYY" and must be between 1987 and 2076.



Windows Task Scheduler
For each backup set, you can choose between Z-Cron and Windows Task Scheduler for scheduled backups. Select this option if you want to use Windows Task Scheduler.

Runtime Options



Max. performance
If activated the backup task will run with the maximum performance. You can deactivate it to automatically slow down the backup task depending on the current system load.

Click the button  to set the maximum cpu usage of the backup task or at which level of system load the task should slow down.

File permissions (NTFS Permissions)

NTFS compatible backups. Extended file info and attributes are included in the backup. Security settings are copied to NTFS formatted backup mediums and are also included when restoring files. Path lengths of more than 260 characters are supported.

An NTFS formatted backup volume is required to include security settings in the backup!

Empty Directories
This option means that empty directories are included in the backup archive. This is helpful if you want to be able to restore your complete directory structure including empty directories.

Directory Structures
The 1:1 file copy of files and directories implies the backup of full directory structures. The option is set by the software and cannot be disabled (it is grayed out). Only for synchronization of one single folder may this option be deactivated.

Clear Archive bit
The archive attribute of the source files is cleared/deactivated after backup.

Directory Permissions
If this option is selected, the directory access rights are included in the backup.

Note that this option can lead to problems with backups in a network.

VShadow Copy
If this option is activated, a Volume Shadow Copy is created for the source drive. This allows copying locked files.

Z-VSScopy is contained in the Freeware Version of Z-DBackup and is itself freeware for private use.
If you want to use Z-VSScopy with the Professional Version of Z-DBackup, you need to purchase a license.

Real time
In conjunction with the VSScopy option, the data is backed up directly from the shadow copy, so you get a consistent backup of directories, Hyper-V or databases even during operation. If this option is set, files that are currently being backed up can still be opened while the backup is running. This allows users to continue working undisturbed, even while the backup is running and they need to access files that are part of the backup for their work. Without the VSScopy option, this setting has no function and is then deactivated in the setup.

Asynchronous Copy

Dynamically adjusted buffers and asynchronous file transfer between two hard drives can increase the copy speed when large files get copied.The system load is reduced a little bit. This option is a good choice when the backup contains larger files. But this method could reduce the backup speed in case alot of small files should be copied.

Open files: Z-DBackup automatically backs up open files that are not locked by another application.

Without the module Z-VSScopy, Z-DBackup cannot copy files that are locked by other applications!

Backup Notes and Default Settings

Note
With this button, you can add a textnote to a backup set. The notes can also be accessed from the context menu in the main window. A note can be shown as a message on the screen before or after a backup with this backup set!

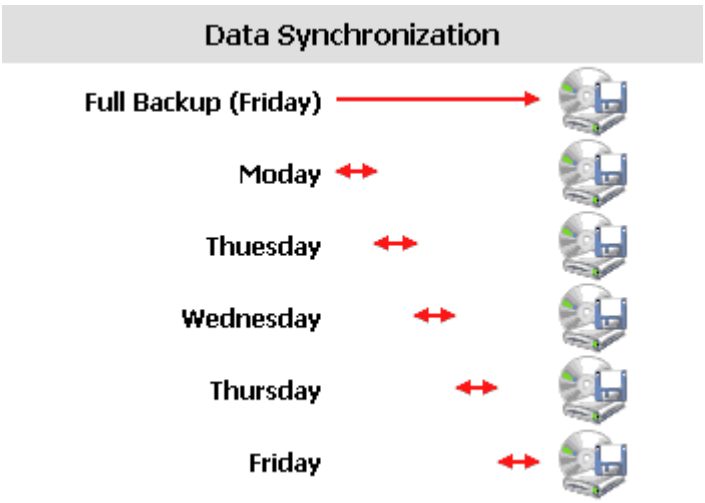
Default Settings
This button resets the backup set to the default settings.

1.1.3.9.2. Synchronization

Data Synchronization

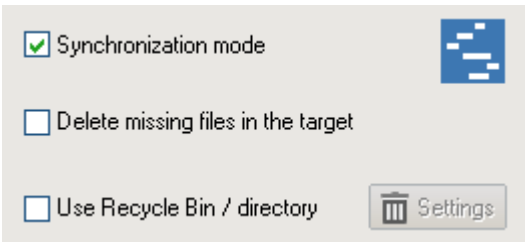
Z-DBackup supports different methods for 1:1 backups of data.

In addition to full backups, incremental and differential backups, Z-DBackup can also be used for sychronization/mirroring of files and directories. The program creates an exact copy of the data from the source directory in the target directory. When this method is used, only new or changed files are copied to the target directory. Optionally, data in the target directory which is not present in the source directory can be deleted automatically or with a user prompt.



Synchronization Mode

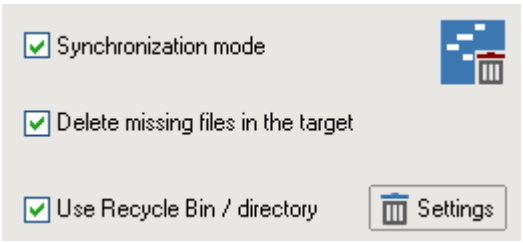
If this option is activated, only files which are new or newer than those present in the backup directory are copied.



Synchronization Mode - Delete missing files in the target directory

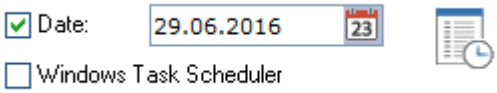
Like Synchronization Mode, but files and directories will be **deleted** from the target directory if they no longer exist in the source directory.

Before files get delete a dialog appears and you can choose to delete the listed files.
You can deactivate this dialog by activating ***Use Recycle Bin / directory*** and choosing the apropriate setting in the configuration window.



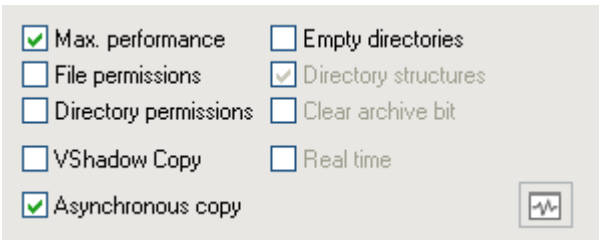
Use Recycle Bin / directory
Here you can choose how Z-DBackup should treat files which are to be deleted or overwritten. If this option is activated, such files are moved to the Recycle Bin or optionally to any other directory. You can select a directory by clicking on the button Settings.

Backup files newer than...
Select this option if you only want to back up data from after a specific date. The date must be entered in the format "DD.MM.YYYY" and must be between 1987 and 2076.



Windows Task Scheduler
For each backup set, you can choose between Z-Cron and Windows Task Scheduler for scheduled backups. Select this option if you want to use Windows Task Scheduler.

Runtime Options



Maximum speed
Deactivate this option to prevent Z-DBackup from sending data faster than the target drive can process them. This is useful for slow components, such as USB or network drives, and can prevent Z-DBackup from freezing periodically or aborting backup processes to slow drives. You can specify a delay time from 0 to 10 ms in the program settings.

Empty directories
Include empty directories in the backup. This can be useful if you want to be able to restore the complete directory structure including empty directories.

NTFS Permissions

NTFS compatible backups. Extended file information and attibutes are included in the backup. Security settings are copied to a NTFS formatted backup medium and can be restored.

Attention: Even NTFS user permissions are included in the backups. If only one user is allowed to access the original files, only this user will be able to access the backups as well. Also, if data is synchronized e.g. from a PC to a laptop, they may not be accessible there, because the internal user ID (SID) is different even if the same user name is used on both devices. This option is designed especially for Microsoft networks with domain control.

To include NTFS permissions in the backup, you need an NTFS formatted backup medium!

Clear Archive bit
The archive attribute of the source files is cleared/deactivated after backup.

Directory structures
The complete directory structure is included in the backup.

Directory permissions

The Windows directory access rights are included in the backup. This setting is not usually needed for normal backups.

VShadow Copy
If this option is activated, a Volume Shadow Copy is created for the source drive. This allows copying locked files.

Z-VSScopy is contained in the Freeware Version of Z-DBackup and is itself freeware for private use. If you want to use Z-VSScopy with the Professional Version of Z-DBackup, you need to purchase a license.

Real time
If this option is activated, you can still open files that currently get backed up by a running backup job. This allows users to continue working without interruption, while a backup (including files the user is working with) is running in the background

Asynchronous Copy
Dynamically adjusted buffers and asynchronous file transfer between two hard drives can increase the copy speed when large files get copied.
The system load is reduced a little bit.
This option is a good choice when the backup contains larger files.
But this method could reduce the backup speed in case alot of small files should be copied.

Open files: Z-DBackup automatically backs up open files that are not locked by another application.

Z-DBackup needs the add-on module Z-VSScopy to include locked files in a backup!

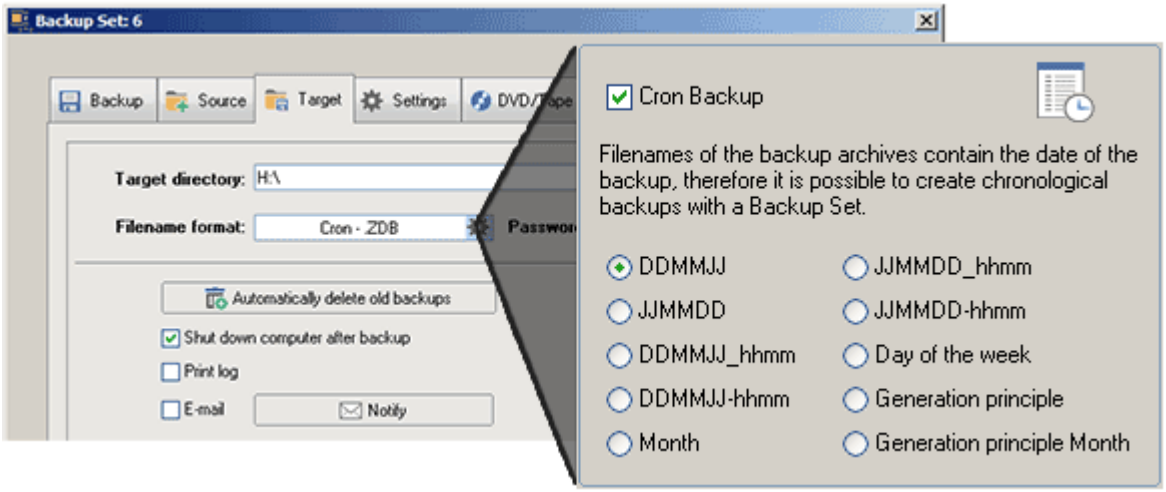
Backup Notes and Default Settings

Note
With this button, you can add a textnote to a backup set. The notes can also be accessed from the context menu in the main window. A note can be shown as a message on the screen before or after a backup with this backup set!

Default Settings
This button resets the backup set to the default settings.

1.1.3.9.3. Backup Directory Names

Add date to target path name
The target path (directory name) of the backup set contains the current date. This makes it possible to use a backup set to create chronological backups or backups with the generation principle.



Week day
The backup directories are overwritten in the following week. You can thus access all data of the past week.

Generation principle

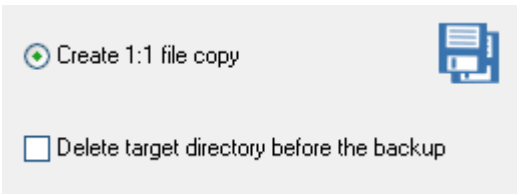
1. week	MON	TUE	WED	THU	Friday 01
2. week	MON	TUE	WED	THU	Friday 02
3. week	MON	TUE	WED	THU	Friday 03
4. week	MON	TUE	WED	THU	Friday 04
52. week	MON	TUE	WED	THU	Friday 52

The MON to THU backup directories are overwritten in the followin week, the Friday archives only every 52 weeks. You can thus access all data from one year.

The generation principle is bound to the copy backup method. If the generation principle should be limited to backups for one month, older backup directories can automatically be deleted by Z-DBackup.

This setting is not needed for the Iomega® REV™ Loader 280/560! The REV™ Loader 280/560 is controlled via entries in the action list prior to and after the backup.

Delete target drive prior to backup

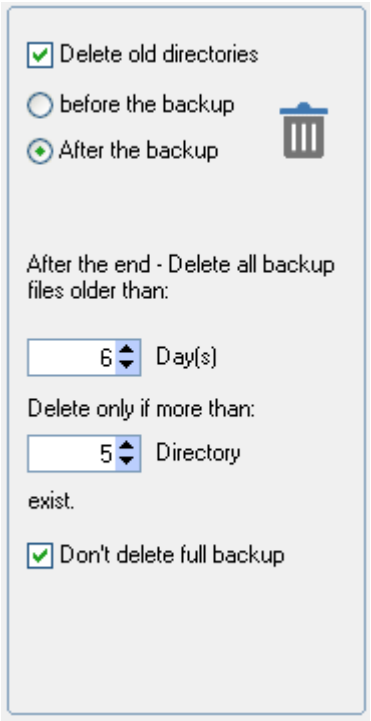


Z-DBackup can optionally delete (empty) the target drive before the backup.

⚠ **WARNING – Possible data loss!** Do not use the root directory of your system hard drive for your backups!

Automatically delete old directories
If chronological backups are used, old backup directories can automatically be deleted by Z-DBackup. You can have

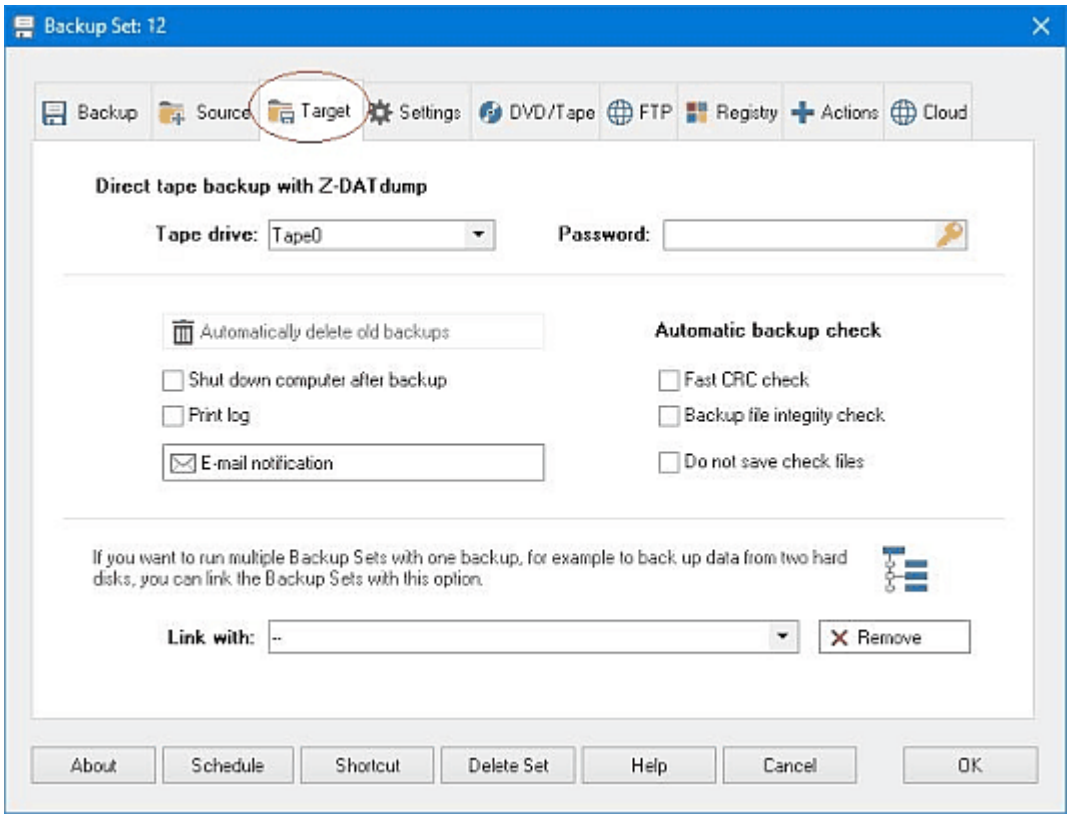
old directories deleted when they reach a certain age (in days), or when there are a certain number of backups in the target location, or a combination of the two.



WARNING – Possible data loss! Do not use the root directory of your system hard drive for your backups!

Do not delete full backup
If this option is activated, the last differential or incremental full backup is not deleted. Point of reference is the date of the last full backup, i.e. all backups that were created on the same day as the last full backup are not automatically deleted.

1.1.3.10. Backup Target - TAPE



Tape drive
Select the tape drive to which you want to write the backup from the list.

The backup is written to the tape directly as a 1:1 file copy

Password
The backup settings can optionally be protected with a password.

The password can be between one and 32 characters long. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***!%/&()?.-;+:***@*<>#. The password is case-sensitive; lowercase and uppercase letters are different. Generally, longer password (with eight or more characters) are more secure than shorter passwords, and passwords with letters and numbers are more secure than those which only consist of letters.

Shutdown computer

Use this option if you want the computer to be shut down automatically after backup.

Automatic Backup Verification

Optional CRC check after the backup for tape drives without "verify-after-write" technology.

LTO uses an automatic verify-after-write technology to immediately check the data as it is being written.This separate verify operation doubles the number of end-to-end passes for each scheduled backup, and reduces the tape life by half.

Print Log File

Activate this option if the log file for the backup should be printed out automatically after backup.

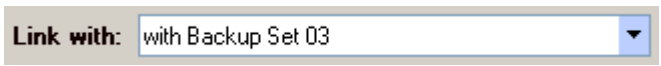
E-Mail Notification

Z-DBackup can send e-mails to a user-defined e-mail address. This option is especially useful for system administrators who want to use Z-DBackup on remote servers and still be notified about all backup results. The mail contains the time, date and backup log file. You can configure the sender and recipient data in the program settings – e-mail settings.

Fast CRC-Check

Medium check after backup.

Link with another backup set



If you want to link several backup sets together to run them immediately one after the other, for example to back up data from more than one partition, you can do that with this option.

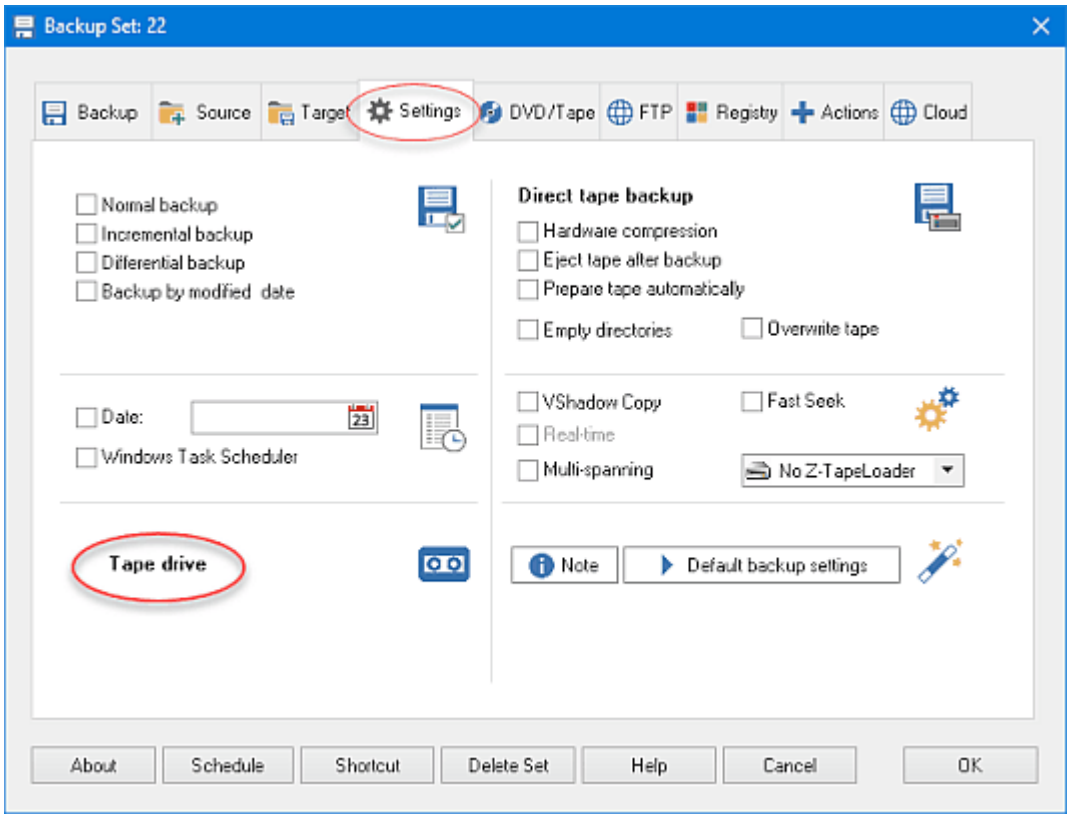
If a backup set is linked to another backup set, the shutdown option is deactivated because only the last backup set of such a chain can shut down the computer.

In the freeware version, backup sets cannot be linked, i.e. only the called backup set is run!

LTO Tape Backup

- Tape Backup
  - Tape Setting
  - Tape Libraries / Autoloaders
- Add-On Modules

1.1.3.10.1. Settings - Tape



Z-DBackup supports a variety of methods for tape backups. If you are not sure which settings lead to optimal results for you and you just want to create a backup of your data for the first time, you can simply skip these backup settings, because for a simple copy backup, none of the fice backup methods must be activated in the setup! It is the default settings for a newly created backup set.

Copy Backup (default setting)
With a copy backup all selected directories are saved without marking the files as copied (the archive attribute remains unchanged). A possibly existing backup file is deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.

For a simple copy backup, none of the five different methods must be selected! This is the default setting after a new backup set has been created.

Normal Backup
The normal backup is a copy backup with the additional feature that the archive attribute is reset/deactivated. A possibly existing backup file is deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.

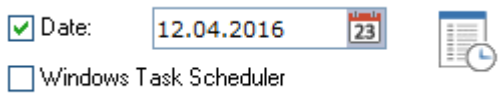
Incremental Backup
A series of incremental backups starts with one full backup. At each following backup, only those files that were changed or have been created since the last (full or incremental) backup will be copied. All copied files are marked, i.e. the archive attribute is deactivated. With this backup method, you need the most recent full backup and all following incremental backups to restore all your files.

Differential Backup
A series of differential backups starts with one full backup. At each following backup, only those files that were changed or have been created since the last full backup will be copied. The archive attribute of copied files is deactivated during full backups, but not during any following differential backups. With this backup method, you need the most recent full backup and only the latest incremental backup to restore all your files.

If you want to use a differential/incremental backup set for full backups, you can simply create an additional desktop shortcut or Z-Cron job with the action "Full differential/incremental backup"!

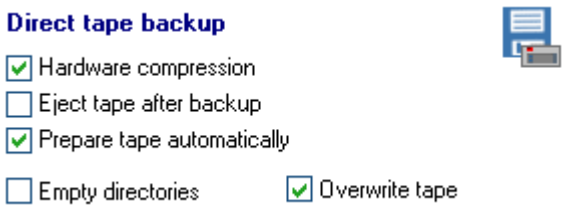
Backup by modified date
With this backup method, only files that were changed or created on the day that the backup is run are copied. The files are not marked as copied, i.e. the archive attribute remains unchanged.

DirGuard
Select this option if you only want to back up data from after a specific date. The date must be entered in the format "DD.MM.YYYY" and must be between 1987 and 2076.



Windows Task Scheduler
For each backup set, you can choose to create a task for Z-Cron or the Windows Task Scheduler. Select this option if you want to use Windows Task Scheduler for scheduling your backups.

Execution Options



Hardware compression
Use the data compression feature of the tape drive, if supported.

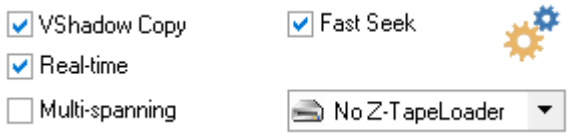
Eject tape after backup
The tape is automatically ejected from the drive, if the hardware supports this feature. You should disable this option if you use a tape auto loader.

Automatically prepare tape
Unformatted tapes are automatically formatted and prepared according to Z-TapeBackup settings prior to backup.

Empty directories
Include empty directories in the backup. This can be useful if you want to be able to restore the complete directory structure including empty directories.

Overwrite tape
Select this option and the tape will be overwritten each time you perform a backup. Otherwise the backup data will be

written at the position after the last backup on the tape.



VShadow Copy
If this option is activated, a Volume Shadow Copy is created for the source drive. This allows copying locked files.

⚠ **Without the module Z-VSScopy, Z-DBackup cannot copy files that are locked by other applications!**

Real-time
In conjunction with the VSScopy option, the data is backed up directly from the shadow copy, so you get a consistent backup of directories, Hyper-V or databases even during operation. If this option is set, files that are currently being backed up can still be opened while the backup is running. This allows users to continue working undisturbed, even while the backup is running and they need to access files that are part of the backup for their work. Without the VSScopy option, this setting has no function and is then deactivated in the setup.

Fast Seek
The position of the files on the tape is automatically tracked and stored in a file. Unfortunately, the FastSeek option requires a lot of time on old tape drives which can lead to massive slowdowns when backing up more than 5,000 files.

⚠ Users who back up only few but large files should still use this function because it makes restoring single files much faster and more comfortable because the tape drive can immediately reel the tape to the correct position instead of reading in the whole tape looking for the file.

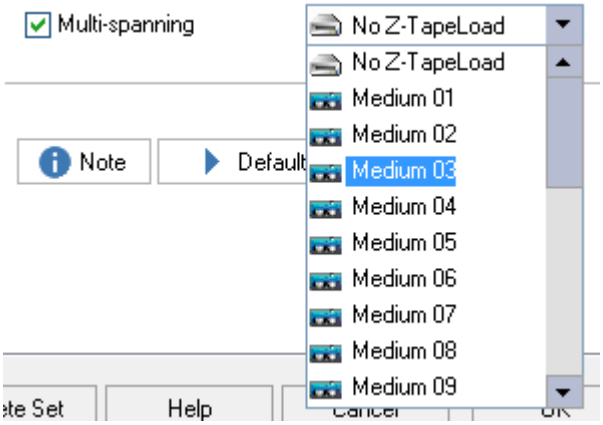
Multi-Spanning
The files will be spread across multiple tapes.

The amount of empty tapes needed will be determined at the beginning of the backup process. Z-TapeBackup presumes that 96% (default value) of the native tape capacity can be used to store the data (this value (***used tape capacity***) can be changed in the settings of Z-TapeBackup). The native tape capacity is the capacity of the tape without taking hardware compression into account. The remaining capacity (4% by default) is used for file information and tape markers by Z-TapeBackup and also serves as a buffer in case there are 'bad blocks' on tape (blocks that can't be used for data storage anymore). The number of bad blocks on a tape increases over time, depending on how ofter the tape gets used. A bad block can only be determinded when you try to write data on tape. That's why Z-TapeBackup can't determine beforehand how many bad block the tape has and thus how much data actually fits on the tape. The default value of 96% of actually available space for data on the tape is only an estimate. If it turnes out that not all files that should be written to tape can be stored on it due to too many bad blocks, the backup will fail. In case this happens you should reduce the ***used tape capacity*** in the settings of Z-TapeBackup.

Tapes of the same native tape capacity have to be used for multi-spanning. A maximum of 20 tapes can be used.

⚠ Single files cannot be split up. The largest file may not be larger than the capacity of one individual tape.

⚠ Multi-Spanning is not possible when the tape backup is started by a schedule or when Z-DBackup/Z-TapeBackup are run as a service, because the tape exchange must be done manually.



Medium selection when using multispanning with tapeloaders
If you are setting up a multispanning backup for a tapeloader/autoloader you can select here, which medium in the tapeloader you want the multispanning backup to start with. After that, data is written to the tapes in their given order.
e.g. You select medium 3 as the start medium for your multispanning backup, then data will first be written to medium 3, then medium 4, then medium 5 and so up. (up to 10 tapes are used)

⚠ When you're **NOT using a tapeloader**, but instead a regular one bay tape drive, the default setting "**NO Z-TapeLoader**" has to be selected.

LTO Tape Backup

- Tape Backup
  - Tape Target
  - Tape Libraries / Autoloaders
- Add-On Modules

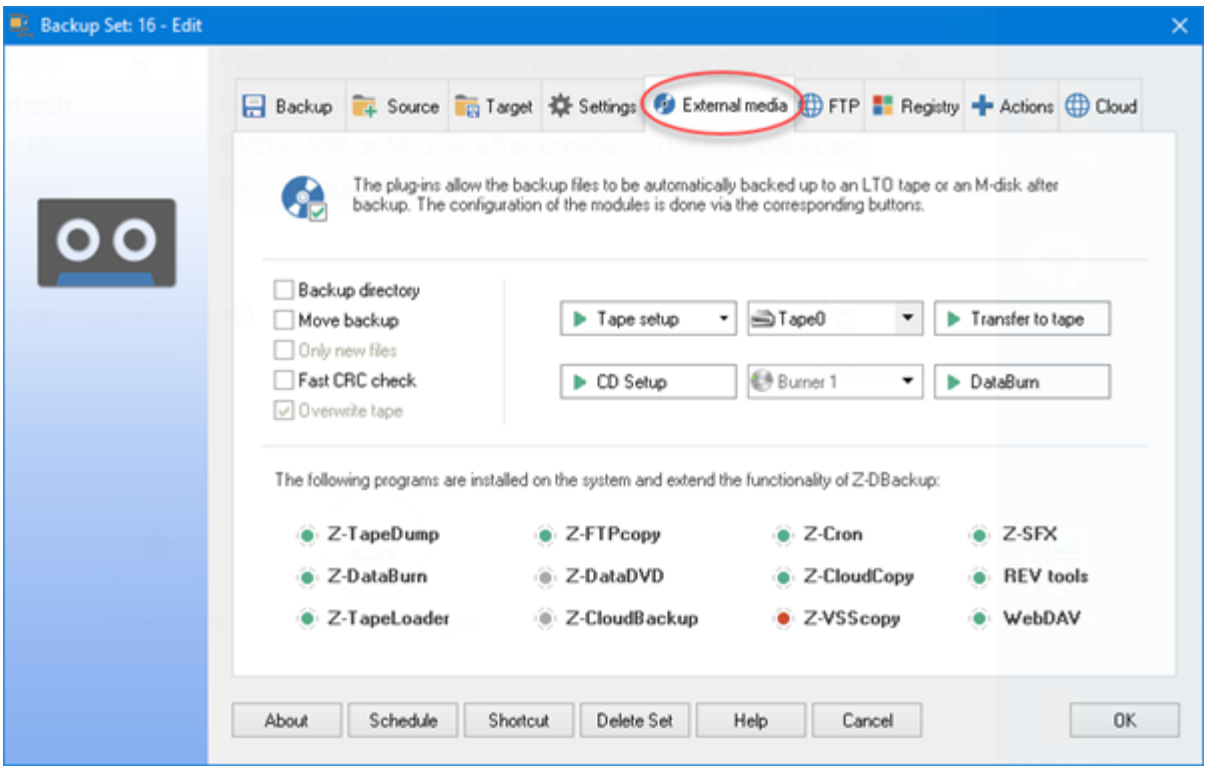
1.1.3.11. Tape and Burner

With our modular design, you can automatically move or copy the backup archive to an LTO drive or a DVD+/-RW or M-Disk after creation. The modules can be configured using the respective buttons.

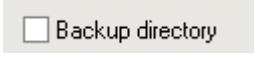
Z-TapeBackup
With the add-on module Z-TapeBackup, the backup archives can be (automatically) saved to IDE/SCSI/S-ATA/USB TRAVAN, VXA, DAT, MLR, SLR, QIC, LTO, Ultrium, AIT, DLT or DDS tape drives. The tape backup options are only enabled if Z-TapeBackup is installed.

Z-DataBurn
With the add-on module Z-DataBurn, the backup archives can be (automatically) burned to CD/DVD/Blu-Ray or M-Disk.

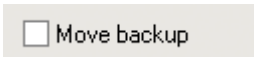
The modules can be configured with these buttons.



Further options
For each backup set you can specify if only the backup archive or the complete backup directory should be saved on tape or CD/DVD/Blu-Ray and whether the archives should be deleted after being copied to removable media.



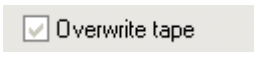
The complete backup directory is copied to CD/DVD/Blu-Ray or to tape.



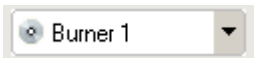
Delete backup file or backup directory after copying it to CD/DVD/Blu-Ray or tape.

Only new files from the backup directory are copied to CD/DVD/Blu-Ray or tape

Verify data on medium after backup.



Always overwrite tape contents (default setting).



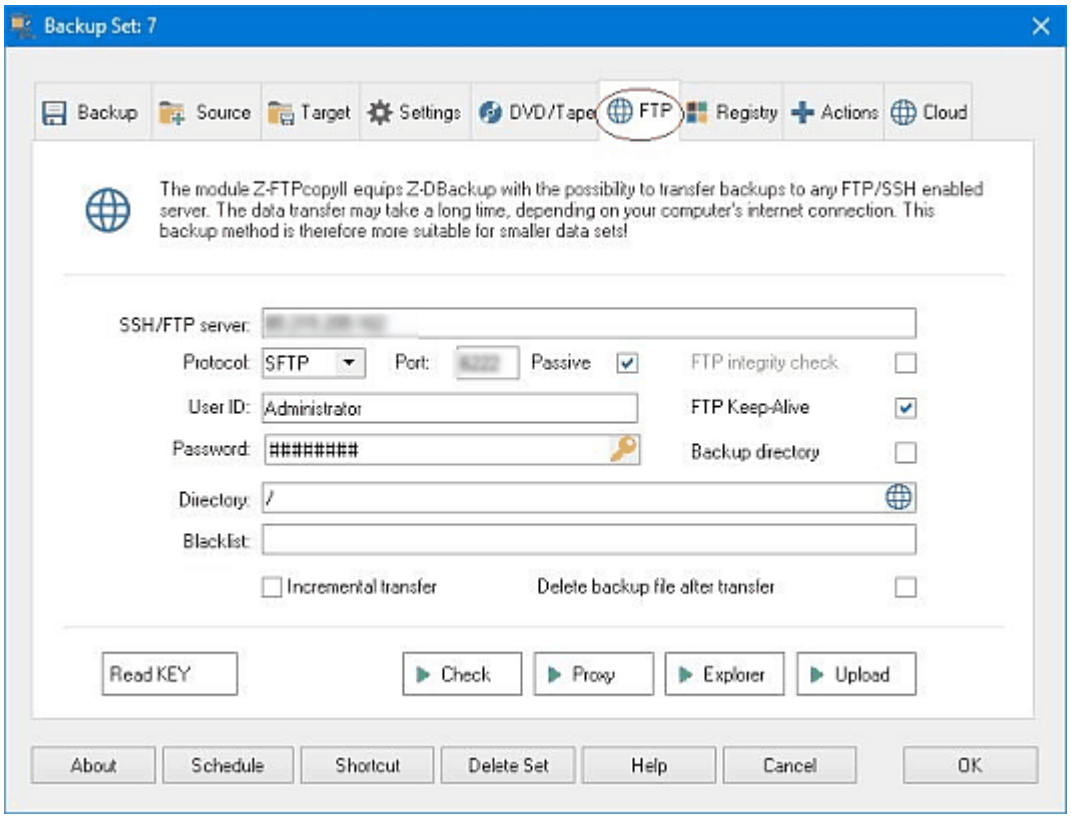
You can choose between two burners. Burner 1 is the default (preferred) drive.

Modular Design

- **Add-On Modules**

1.1.3.12. FTP

The option for FTP copy are activated only when the add-on module Z-FTPcopy has been installed on your computer. You can download the program for free from my website z-dbackup.de..



Configuration of Z-FTPcopy

FTP server
Enter the name or IP address of your FTP/SFTP/FTPS server.

Protocol
Select the FTP protocol you want to use. Ask your network administrator which protocols can be used.
You have the following options:

- FTP

This is an unsecure protocol; your login information and data transfers are not encrypted. It should only be used in your local network!

- FTPS explicit

Sometimes also called FTP/S, FTP-SSL or FTPSe. The unsecure variant uses SSL encryption for the username and password, but data transfers are not encrypted. There is also a secure variant with which data traffic is also encrypted, but because it is considerably slower due to the effort for the encryption and the backup archive can already be encrypted by Z-DBackup, we suggest that you do not use it.

- FTPS implicit

Basically the same as the FTPS variants. You should select this option if you use an older FTP server with an SSL wrapper.

- SFTP (SSH)

Short for "Secure File Transfer Protocol". SFTP ensures a secure data transfer with an encrypted data stream. This protocol encrypts everything, so that no login info or files are readable for intruders.

Port
Enter the port of your FTP server. The port number depends on the server and protocol that is used. Ask your server administrator for the correct port number. It is usually:

FTP	Port 21

FTPS explicit Port 21
FTPS implicit Port 990
SFTP Port 22

KeepAlive
Some servers or firewalls automatically terminate a connection after some time if no new commands have been sent by the client. Z-FTPcopy can send a KeepAlive command in the specified interval to prevent that. Unfortunately this option is not supported by all servers.

Passive Mode
The passive mode controls who establishes the data connection for file transfers after the initialisation connection is complete. If the passive mode is **disabled**, the FTP server establishes the connection to the client to transfer files. Some firewalls or proxy servers do not allow this kind of incoming connections. If the passive mode is **enabled**, Z-FTPcopy creates an additional connection for file transfers.

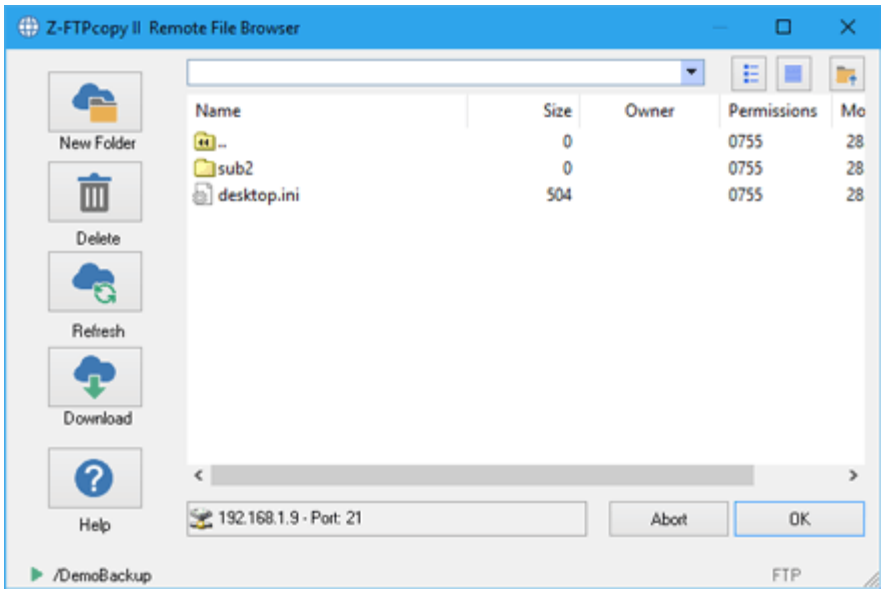
⚠ If you are not sure about your firewall configuration, you should enable this option.

Username and password
Enter the username and password to access the FTP server. The password is stored encrypted in the program configuration file.

⚠ User ID and password can each contain one to 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***!%/()?.-;*:@*<>#*** (no spaces). Please note that passwords are case-sensitive, i.e. upper-case and lower-case letters are different. Generally, longer passwords (with eight or more characters) are more secure than shorter passwords, and passwords containing letters and numbers are more secure than those containing only letters or only numbers.

Incremental upload
If this is selected, only new backup files with a set archive bit are transferred.

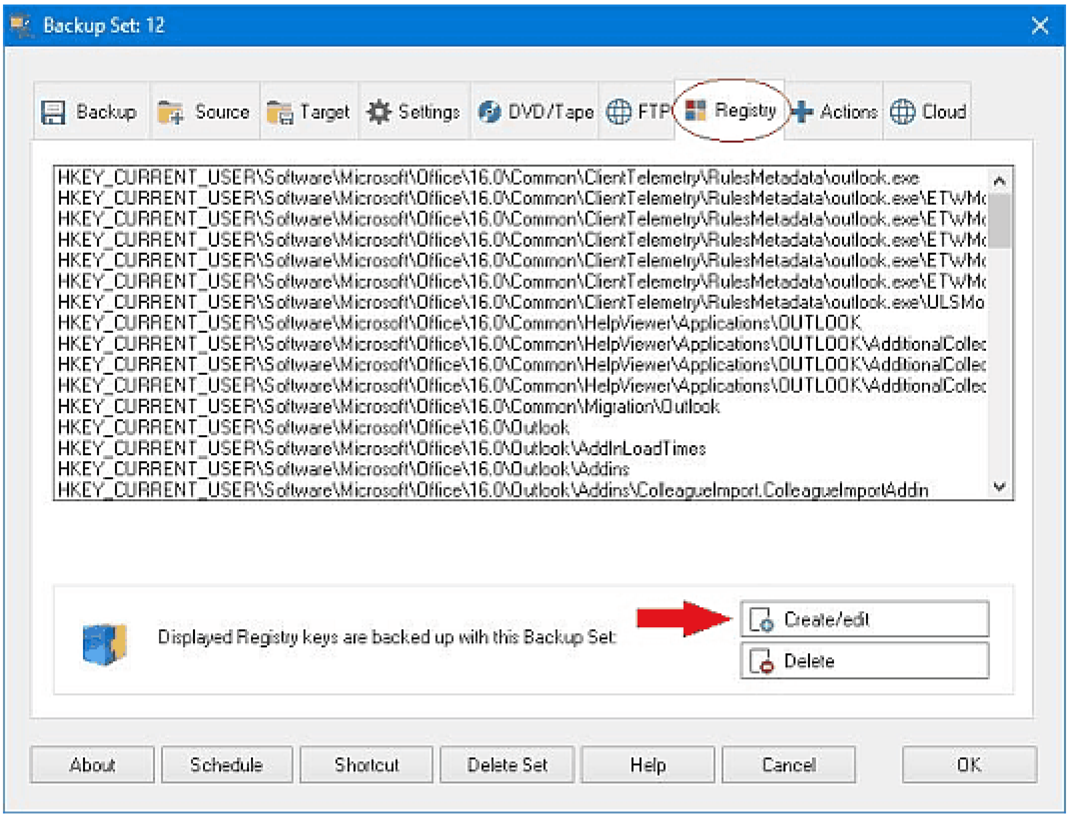
Z-FTPcopy Explorer
For quick and easy selection of the backup directory on the FTP server, there is a Z-FTPcopy Explorer window. It can also be used for restorations.



On an FTP server, you can create and delete files and directories and download files back to your local computer.

1.1.3.13. Registry

Experienced users will be fond of the possibility to selectively backup data from the system registry. Only experienced users should backup and restore registry data.



Registry backups are stored in the RegEdit version 4 format, thus ensuring a simple import of the backups!

Saved registry data that are related to the hardware configuration should only be restored to the same system (hardware and operating system) from which they were backed up. Otherwise, severe damage to the operating system may result. Hardware-related registry data should generally not be backed up, because they can lead to serious problems when restored.

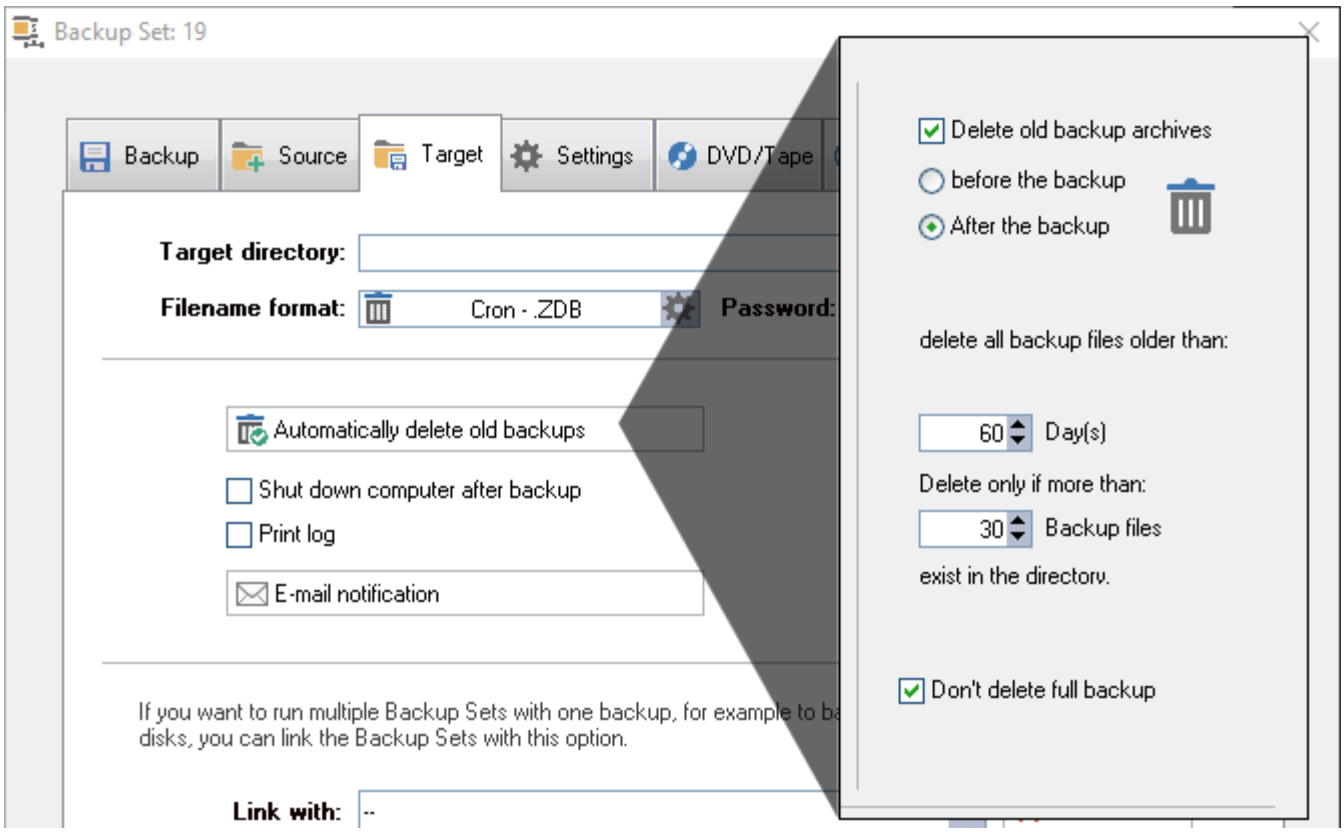
Backup Settings

- Settings Window
- Backup Name and Medium
- Backup to NAS
- Backup to USB
- Backup to DVD-RAM
- Backup to Tape
- Backup Target - ZIP
- Backup Target - COPY

- Backup Target - TAPE
- Tape and Burner
- FTP
- Delete old backups

1.1.3.14. Delete old backups

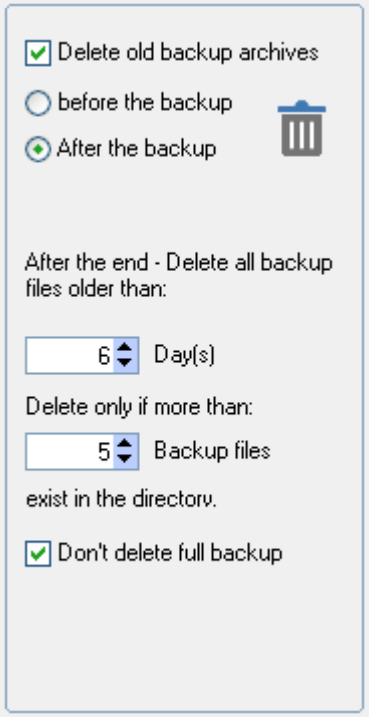
Many backup plans involve the creation of **multiple backup** archives or folders over time on the same backup medium, as is often the case with **incremental** and **differential** backups. At some point the used backup medium will be full and new backups won't be able to be written to the medium if old ones don't get deleted.
Z-DBackup allows you to automatically delete old backup archives or folder directly before or after a backup.



Automatically delete old backups (not available in the freeware version)

If chronological backups are activated, e.g. with differential or incremental backups, Z-DBackup can automatically delete old backup files. It can delete files depending on their age (in days) or the number of files in the backup folder, or a combination of the two.

For a differential weekday backup (5 days) a suitable setting would be:



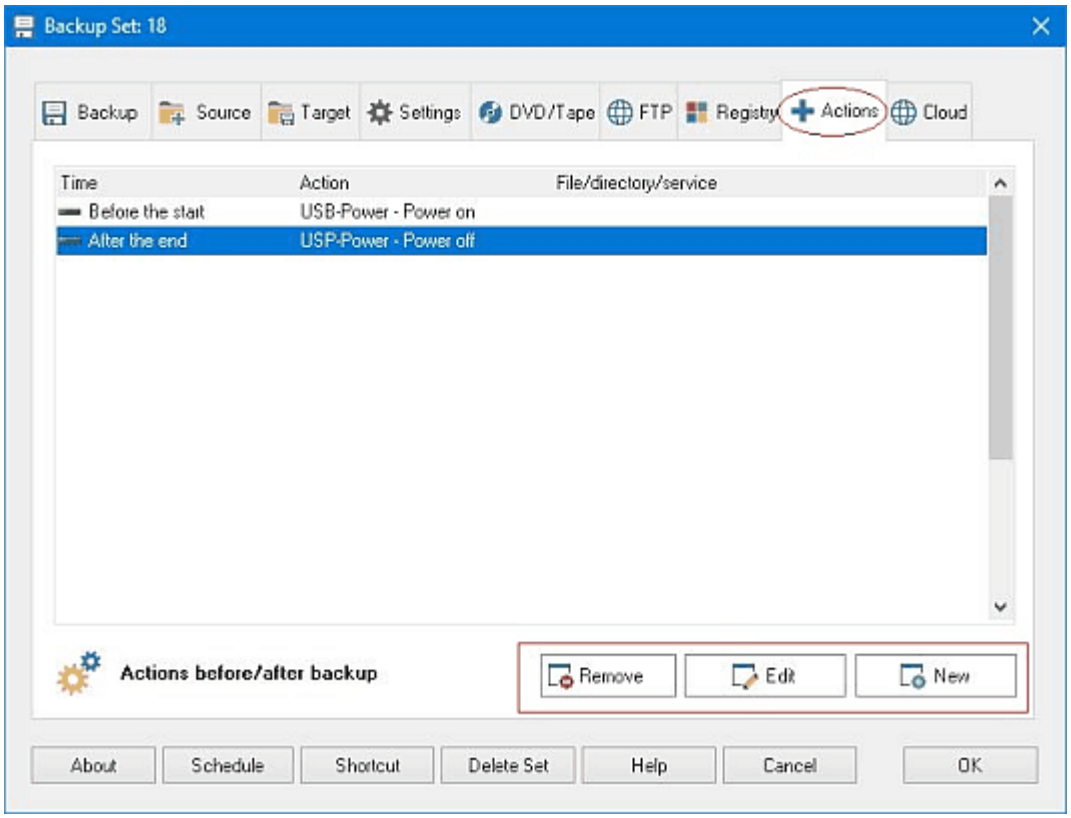
Do not delete full backup (not available in the freeware version)
If this option is activated, the last differential (or incremental) full backup is not deleted. Point of reference is the date of the last full backup, i.e. all backups that were created on the same day as the last full backup will not be deleted automatically.

Backup Settings

- Settings Window
- Backup Name and Medium
- Backup to NAS
- Backup to USB
- Backup to DVD-RAM
- Backup to Tape
- Backup Target - ZIP
- Backup Target - COPY
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry

1.1.4. Actions

Often, one needs to have certain programs, system services or batch files started or stopped before the backup begins or after it is finished. For that reason, an action list is integrated in Z-DBackup.



Action list
The action list shows all actions that you have defined. The listed actions are run in the same order in which they are shown in the list (before or after the backup, according to your configuration). Up to 20 actions can be created.

Remove
Lets you remove selected actions from the list.

Edit
If you want to edit an existing action, select it in the list and click Edit.

New/Create
Lets you add a new option to the list.

To select an action, just click the entry in the list. You can also use the arrow keys to move the selectio double-click it.

You can delete actions by selecting them and the pressing Remove entry underneath the action list.

Context Menu

A right click into the action list opens the context menu which contains the following options.

Option: **Edit**

Lets you edit the action.

Option: **Run**

Test your saved settings.

Option: **Move up**

Moves the selected action up in the list by one position.

Option: **Move down**

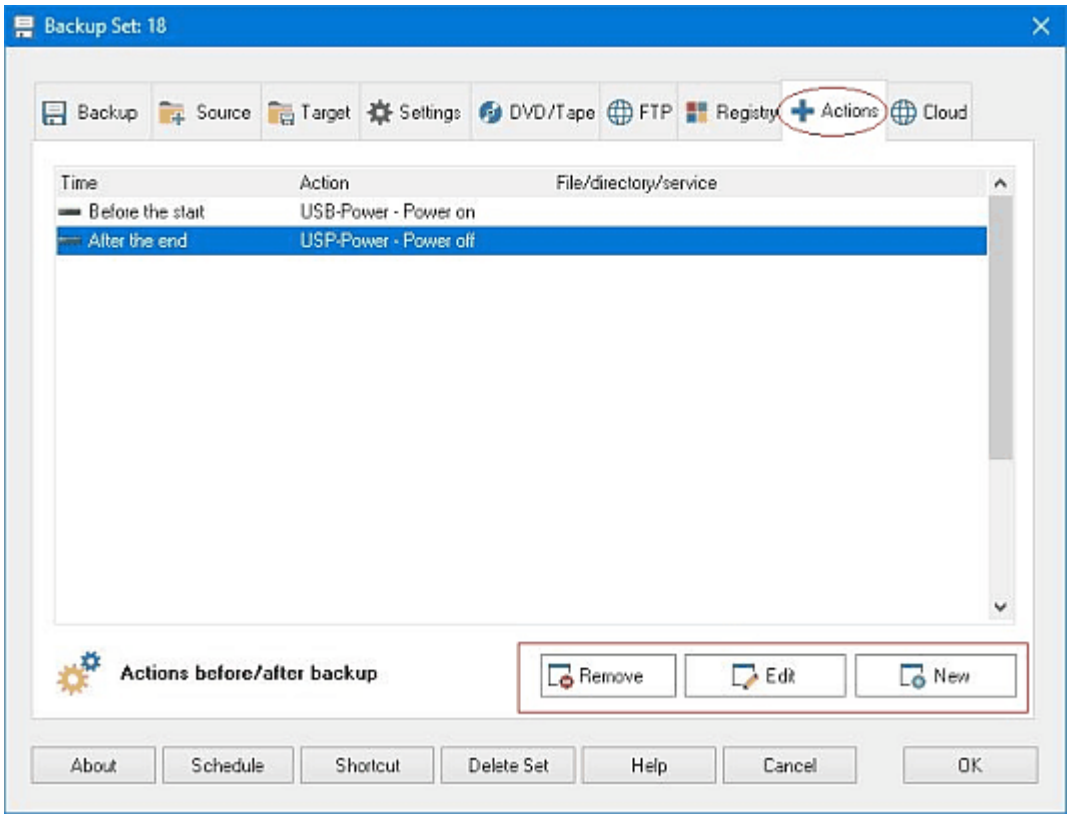
Moves the selected action down in the list by one position.

Actions before/after the backup

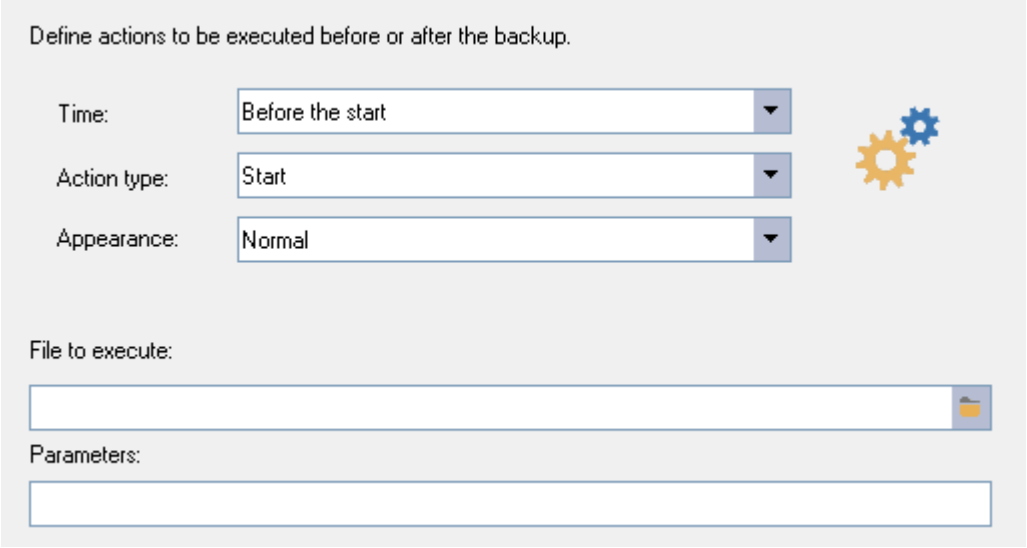
- Actions
  - Create/Edit
  - Shell Script
  - Start/Stop Service
  - VBScript
  - Z-Cron Job
  - SSH Copy
  - USB-Connect
- Add-On Modules

1.1.4.1. Create/Edit

In professional backup environments, it is not unusual that certain programs, system services or batch scripts must be run or stopped before or after a backup. That's why we built an action list with predefined action into Z-DBackup.



Create / Edit Backup Action



Time

Select when an action should be run. Actions can be run before and after each backup as well as before and after full backups. Additionally, you can select the moment before the drive check which precedes the actual backup.

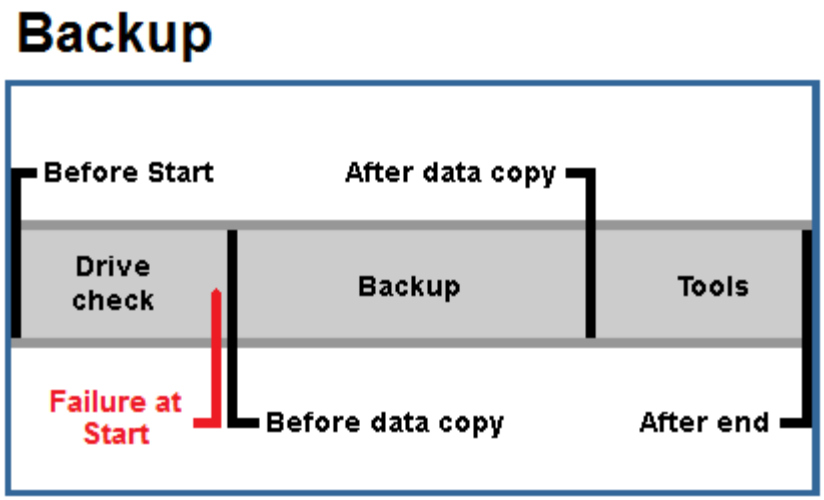
Before the start: The moment before Z-DBackup does anything that has to do with the backup.

Failure at start: This event gets triggered when a failure occurse during the **drive check** and the backup has to be aborted before any files have been copied. In this event Z-DBackup will execute the action specified here and then quit the backup. In this case actions specified for the events before data copy, after data copy and after the end will not be executed.

Before data copy: The moment directly before the main data copying starts. When selecting before each full backup the action will also be executed at this moment but only before each full backup and not before every backup (e.g. when you're making an incremental backup).

After data copy: The moment directly after the main data copying process and before any like Z-DataBurn, Z-FTPcopy or Z-TapeBackup, get started. This allows, for example, to re-start an SQL-Server before the FTP transfer begins. When selecting after each full backup the action will also be executed at this moment but only after each full backup and not after every backup (e.g. when you're making an incremental backup).

After the end: The moment at the very end of the backup, after Z-DBackup has finished everything else.



Types of actions

In the following table, you can find an overview of the different types of actions that Z-DBackup supports.

Option	Description
Close Outlook	Quits the program Microsoft Outlook.
Close Z-TapeBackup	Quits the program Z-TapeBackup.
Copy backup archive	The backup archive(s) created by Z-DBackup can be copied to another directo "Network copy" action to copy the backup to a remote location.
Copy log file	Copies the log file of this backup set to the selected directory.
Create Shadow Copy	Creates a shadow copy of the selected source drive.
Delete log file	The log file for this Backup Set is deleted.
Destroy	Close a program with a given window name. In contrast to the "Exit" function, tl several methods to also close minimized programs.
Disconnect USB device	Automatically deactivate/unmount the USB device used for the backup. The de off without data loss.
Display message	Show a dialog box with a user-defined message.
Display note	Shows the note that was saved for the backup set as a message on the screer
Eject CD/DVD/Blu-Ray	Eject the medium from a disk drive.
Eject REV medium	Eject Iomega® REV™ medium. ⚠ This function is available if the Iomega® REV software is installed. If you u newer, please make sure you have the latest version of the REV software insta
Eject target medium	Eject target medium, can be used to eject RDX mediums etc.
Empty Recycle bin	Empties the Windows recycle bin.
Erase tape	Clear a tape medium and delete all its contents. You can erase a tape before e example.
Exit	Programs frequently prevent backup programs from accessing their files as lor want to backup such files, you can use this action to close a program before th If you do not want to quit a program, but still want to include open files in a module Z-VSScopy for Z-DBackup.
FTP download	Automatic download of files or directories from an FTP server. ⚠ For this action, the FTP tab in the Backup Set settings must be filled in.
Load REV medium	Loads an Iomega® REV™ medium. ⚠ This function is available if the Iomega® REV software is installed. If yo newer, please make sure you have the latest version of the REV software insta
mediDok SQL-Backup	Trigger a backup of the mediDOC SQL data base.

Mount HDD	Mounts the target HDD.
Mount VHD	Mounts the selected VHD file.
Network copy	Copy the Z-DBackup backup archive to a network drive/directory with a UNC p
Pause	Pause x seconds.
Play sound	Play a Wave sound file.
Priority - High/Low/Normal	Set the process priority of Z-DBackup to one of the following Values: *low*, *norm* A process with a higher priority gets prefered by the operating system when it c usage time. Setting the process priority of Z-DBackup to *low* or *high* can have an influence Z-DBackup compared to other currently running programs if the cpu is under h
Run batch file	Start a batch file and await its termination before the backup is resumed. If the exit code/return value of the batch script is larger than 0, the back signifies an error condition.
Run VBScript	Start a Visual Basic Script (.vbs) and await its termination. The backup will star not running anymore. To use this feature, the Microsoft Windows® Scripting H can check this by running the example script *Test.vbs* that comes with Z-DBac
Run Z-Cron job	Run a specified Z-Cron job. To use this feature, Z-Cron must be installed and t Z-Cron job. Optionally, you can control remote computers in the local network
Self backup	Z-DBackup's program settings and Backup Sets are saved.
SSH/FTP - download	Automatic download of files or directories from an FTP server via the secure SS For this action, the FTP tab in the Backup Set settings must be filled in.
SSH/FTP - upload	Automatic upload of files or directories from an FTP server via the secure SSH For this action, the FTP tab in the Backup Set settings must be filled in.
Start + wait	To open a file and wait for the associated program to finish, you can use this o action is run only when the file isn't open anymore.
Start Addison Service	Starts the Addison service.
Start MSSQL Express	Start Microsoft SQL Express Edition.
Start MSSQL Server	Start Microsoft SQL Server Engine.
Start system service	Start a selected system service.
Start TurboMed® DB	Start TurboMed Database. This function is only available if the TurboMed software is installed.
Start	This option allows to open/start any file. Immediately after loading, the next acti actions have been run, the backup is started.
Stop Addison Service	Stops the Addison service.
Stop MSSQL Express	Stop Microsoft SQL Express Edition.
Stop MSSQL Server	Exit Microsoft SQL Server Engine.
Stop system service	Stop a selected system service.

Stop TurboMed® DB	Exit TurboMed Database. This function is only available if the TurboMed software is installed.
TapeLoader - Load tape	The specified tape is loaded.
TapeLoader - Unload tape	The specified tape is unloaded/ejected.
Trigger-File	The execution of the backup is dependent on whether changes where made to not, since the last backup. Whether the trigger file changed or not is determine checksum of the trigger file to the old checksum. For this action the only applic "before the start".
TPC-CMD	A specified TCP command is sent to an IP address.
Unmount HDD	Unmounts the target HDD.
USB-Power on	Establishes a USB connection betweem a USB device attached to a "USB Con
USB-Power off	Disconnects a USB devices attached to a "USB Connect Switch" from the PC.

File to run
If you have selected "Start", "Start + wait" or "Terminate", you can specify a file in the field "File to run". You can also click on the button on the right side of the text field to choose a file.

Similarly, you can specify a system service if you have selected the options "Start service" or "Stop service".

Parameters
If you want to start a program with commandline parameters, you can enter them in the "Parameters" field. In the professional version, you can also use the following variables in this field, which stand for a string:

Z-DBACKUP Variables	
ZDATE	current date
ZCODE	Return value of Z-DBackup: 0 = Backup OK 1-9 = Error during Backup 10 = Error while burning file to disc 20 = Error during tape backup 30 = Error during FTP transfer 40 = Error during copying
ZFILE	Name of the backup file

Actions before/after the backup

- Actions
  - Shell Script
  - Start/Stop Service
  - VBScript
  - Z-Cron Job
  - SSH Copy
  - USB-Connect
- Add-On Modules

1.1.4.2. Shell Script

Shell Script – Batch files

Z-DBackup starts the batch file you specified and waits for it to finish. The return value of the batch file then controls the further execution of the data backup. If the return value of the batch file is greater than or equal to 1, the backup is canceled. This enables flexible control of your data backup.
If you want to prevent the backup from being aborted in any case, you can do this by entering the command in the last line of the batch file:

Exit 0

When calling external programs in your batch file, you should always use absolute path information (path with drive letter). With a time-controlled data backup, for example, the batch file does not always have the same environment variables available as when you are logged on directly to the computer.

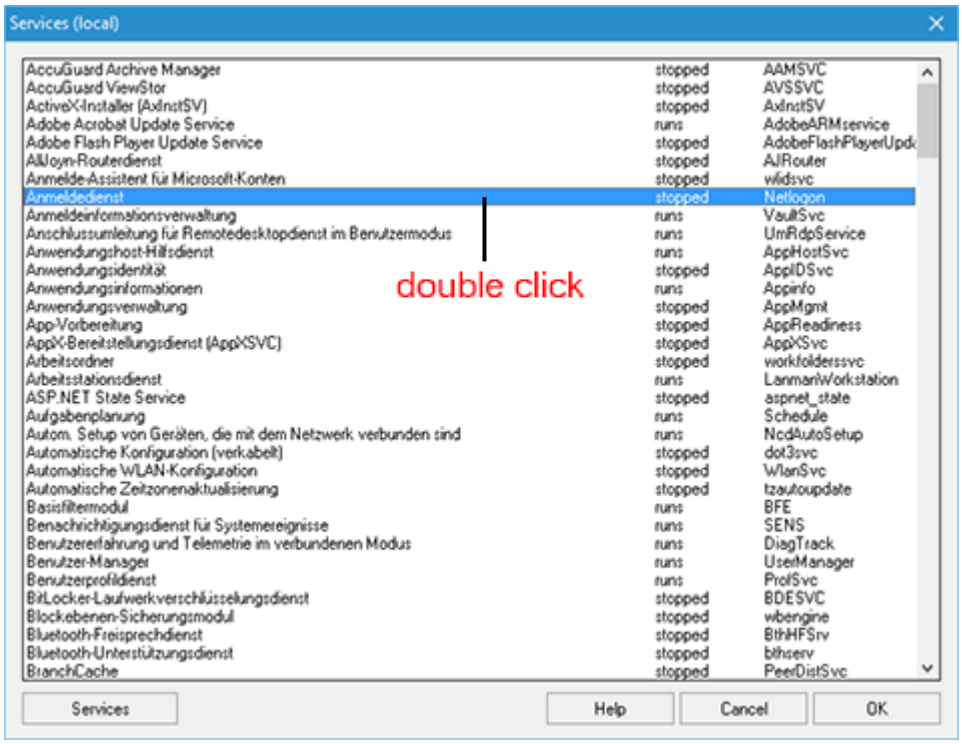
Actions before/after the backup

- Actions
  - Create/Edit
  - Start/Stop Service
  - VBScript
  - Z-Cron Job
  - SSH Copy
  - USB-Connect
- Add-On Modules

1.1.4.3. Start/Stop Service

Overview of local services

By double clicking on a service, you can use the commands **End service** or **Start service** for the selected service.



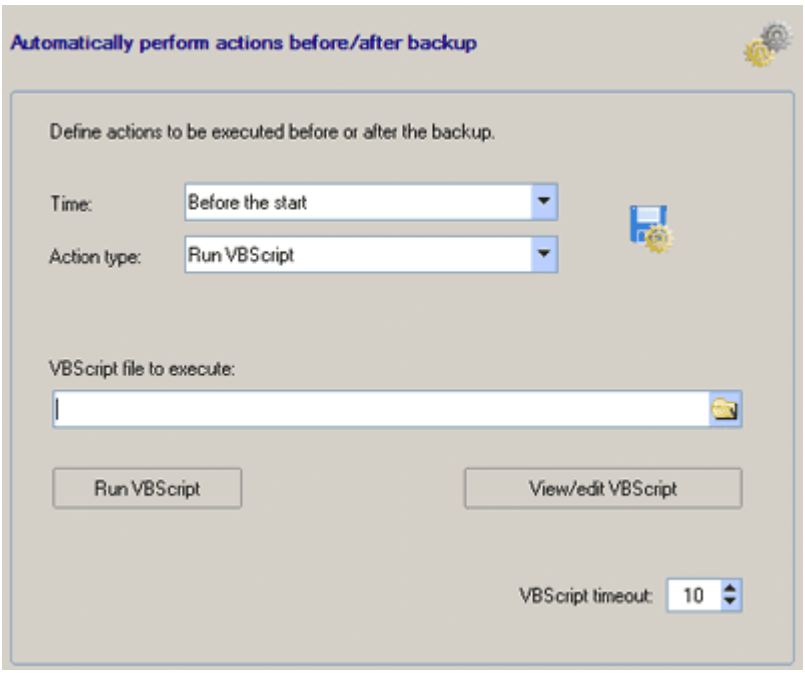
Actions before/after the backup

- Actions
  - Create/Edit
  - Shell Script
  - VBScript
  - Z-Cron Job
  - SSH Copy
  - USB-Connect
- Add-On Modules

1.1.4.4. VBScript

VBScript

You can start Visual Basic Scripts (.vbs) before or after a backup. VBScript is the scripting version of Visual Basic (VB) and can be run on every Windows system with the Windows Scripting Host (WSH).



Requirements and Tips

- Microsoft Windows Scripting Host (WSH) must be installed in order to use VB scripts. You can check this by running the example script 'ZDB-Test.vbs'.
- Properties and methods of the WScript object, such as WScript.Sleep or WScript.Echo, cannot be used in the script. You can find more info in the Microsoft knowledge base.

Example Scripts

All example scripts are located in the folder 'VBScripts' in the Z-DBackup program directory. These example scripts may be changed or extended by us from time to time. If you make any changes to these scripts, be sure to save them under a different name, or else your changes will be overwritten during one of the next LiveUpdates.

The following scripts are included in a Z-DBackup installation:

ZDB-Test.vbs

This script tests whether Windows Scripting Host is installed on your system and gives you a little insight into the possibilities of Visual Basic scripting.

Outlook.vbs

This script quits Microsoft Outlook.

OutlookExpress.vbs

This script quits Microsoft Outlook Express.

KillTask.vbs

This script quits a task given its name. You can find out the name of a task with the Windows Task Manager.

Helpful Websites on VB Scripting

- Microsoft Windows Script Download
- Microsoft Windows Scripting Manual
- Google Groups: Microsoft Scripting Newsgroups

Actions before/after the backup

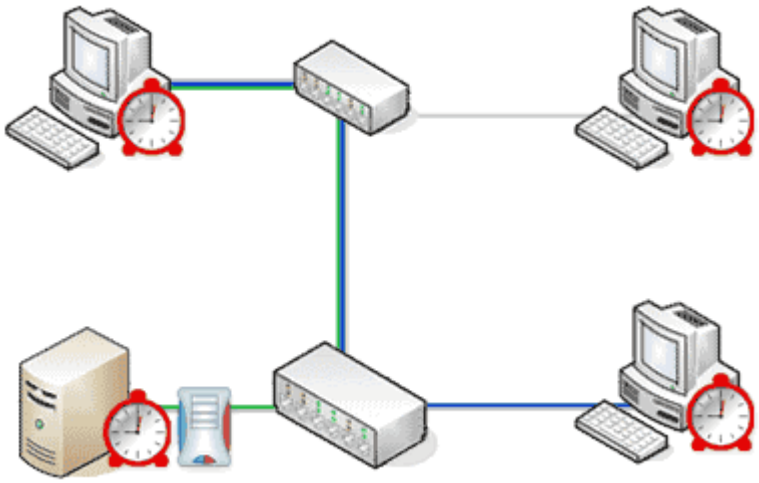
- Actions
  - Create/Edit
  - Shell Script

- Start/Stop Service
- Z-Cron Job
- SSH Copy
- USB-Connect

- Add-On Modules

1.1.4.5. Z-Cron Job

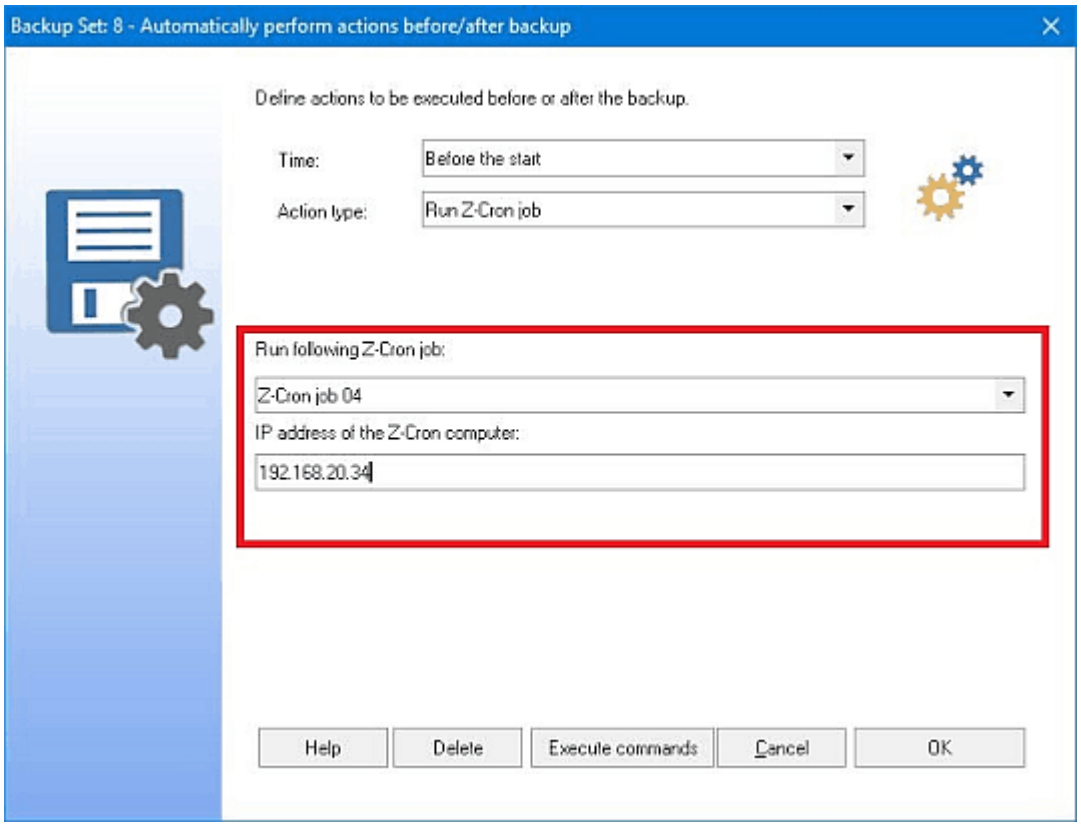
Z-DBackup can not only run programs, batch or VB scripts before or after a backup, but can also execute commands on remote computers, which means that you can control other machines in a network before and after backups. This allows for an easy realization of complex backup tasks in a network.



Precondition for this remote controlling is an installation of Z-Cron on the network computers.

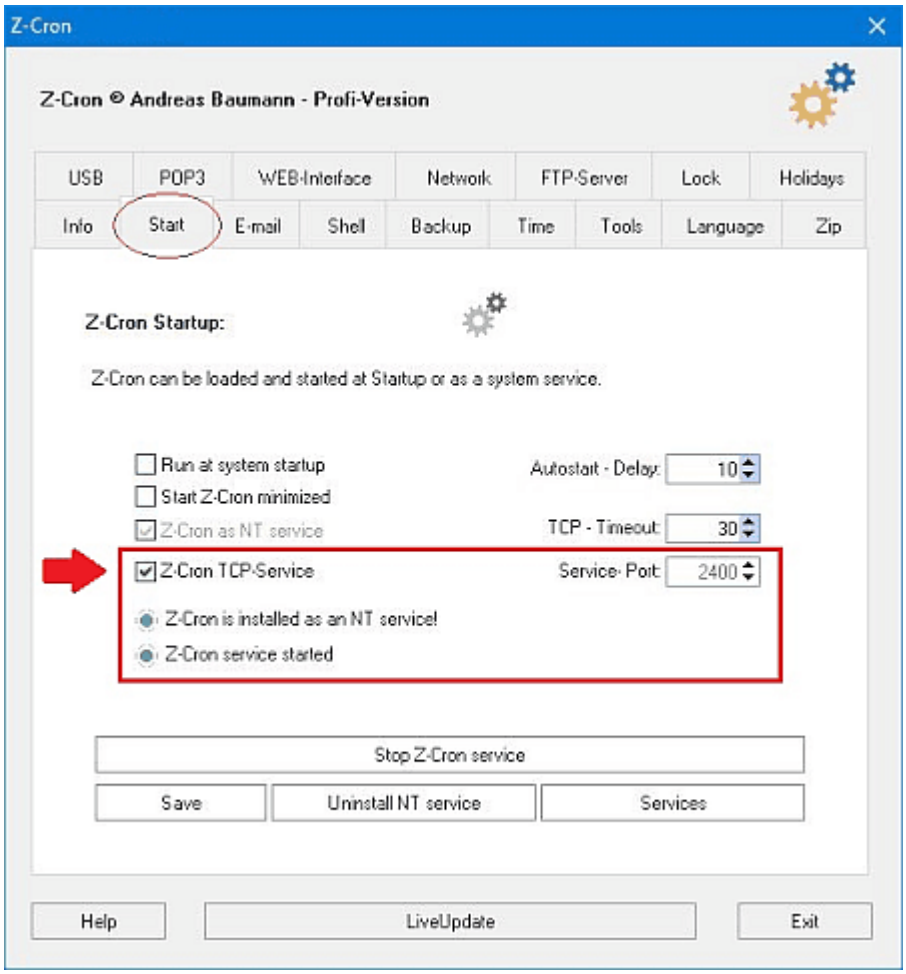
A predefined Z-Cron job is needed on the network computers that you want to control. In this job, the task to be run locally must be defined. You can define actions in Z-DBackup that will be executed before or after a backup. To control a remote computer, you have to set the action to **Run Z-Cron job**. When the backup is run, the action will be performed the specified Z-Cron job is run on the machine with the specified IP address.

Automatically perform actions before/after backup



With the IP address set to "localhost" the Z-Cron job is run on your own computer. To control another computer in the network, its IP address must be entered here.

Configuration of Z-Cron
To execute the action in the network, the Z-Cron service and Z-Cron's TCP service must be activated in the Z-Cron program settings.



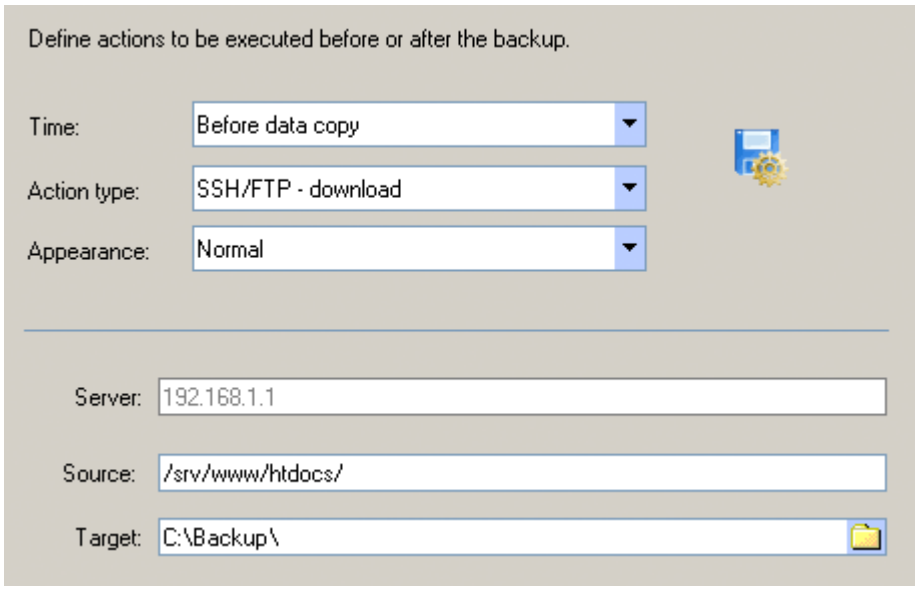
Actions before/after the backup

- **Actions**
  - **Create/Edit**
  - **Shell Script**
  - **Start/Stop Service**
  - **VBScript**
  - **SSH Copy**
  - **USB-Connect**
- **Add-On Modules**

1.1.4.6. SSH Copy

SSHcopy

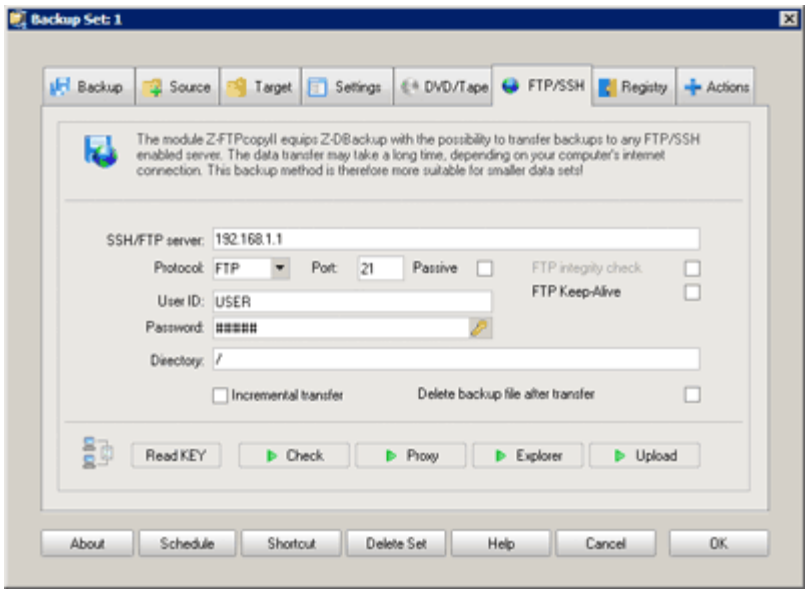
The actions "SSH/FTP upload" and "SSH/FTP download" make it possible to include a Linux/Unix system in a backup. The condition is that Z-FTPcopy is installed and that the remote computer supports SSH login as used by PuTTY and WinSCP.



All commands should be performed before the actual backup, so that the data is copied off the remote computer into a local directory. Once the transfer is completed, the backup is run.

If needed, the command "SSH job" can be used to start or stop a Linux daemon before or after the transfer.

The configuration of the login data for the Linux machine is done in the settings of the backup set in the "FTP/SSH" tab.



Actions before/after the backup

- Actions
  - Create/Edit
  - Shell Script
  - Start/Stop Service
  - VBScript
  - Z-Cron Job
  - USB-Connect
- Add-On Modules

1.1.4.7. USB-Connect

USB Connect

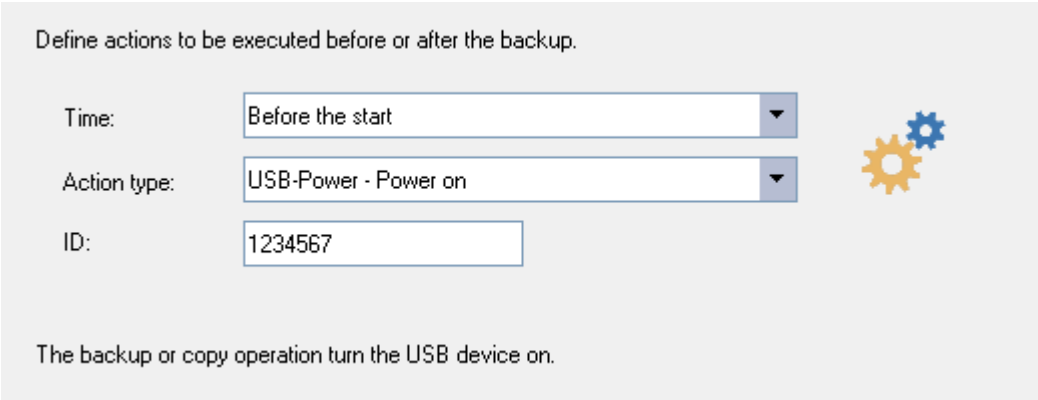
The Cleware USB Connect Switch is a special switch for the computer controlled connection and disconnection of USB devices. The switch has two USB sockets used to connect two devices to each other and a USB controll cable that you connect to the PC that is in charge of switching the USB connection between the devices on and off.

Cleware - Online Shop

To protect the content of your backup it is crucial that the backup medium isn't permanently connected to the PC, but instead only gets connected right before the backup and is disconnected immediately afterwards. The USB Connect Switch allows you to automize this process instead of having to manually connect and disconnect an external USB drive before and after every backup. To do so you would permanently connect the external USB drive to one of the sockets on the USB Connect Switch, connect the other USB socket to your PC and additionally connect the USB controll cable to the PC.

Z-DBackup allows you to automatically connect or disconnect the two devices (e.g. USB drive and PC) attached to the USB Controll Switch before or after every backup. This guarantees that your backup medium is only connected to your PC during the backup process.

Enter the ID of your USB Connect Switch in the corresponding text field to identify the switch to controll. The ID can be found on the backside of every USB Connect Switch.

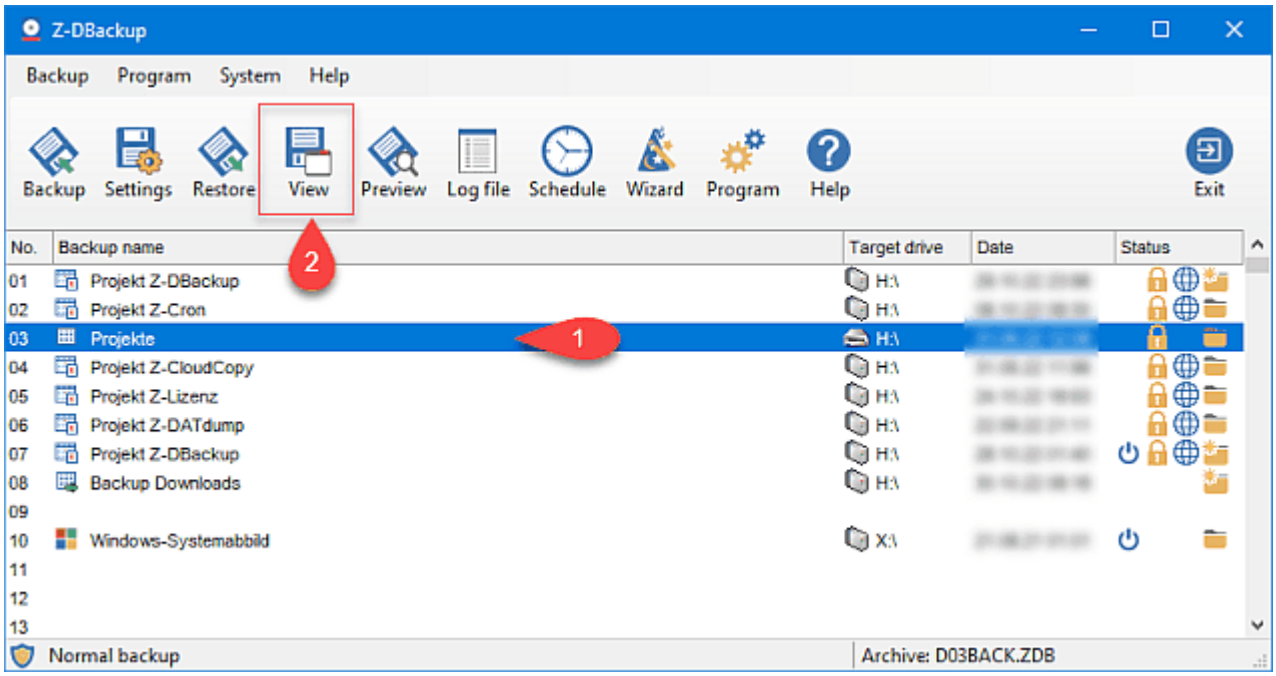


Actions before/after the backup

- Actions
  - Create/Edit
  - Shell Script
  - Start/Stop Service
  - VBScript
  - Z-Cron Job
  - SSH Copy
- Add-On Modules

1.1.5. View Backup

Restore individual files or folders from a backup. To do this, select the relevant backup from the list of Backup-Sets and then click on the Show Button **View** .

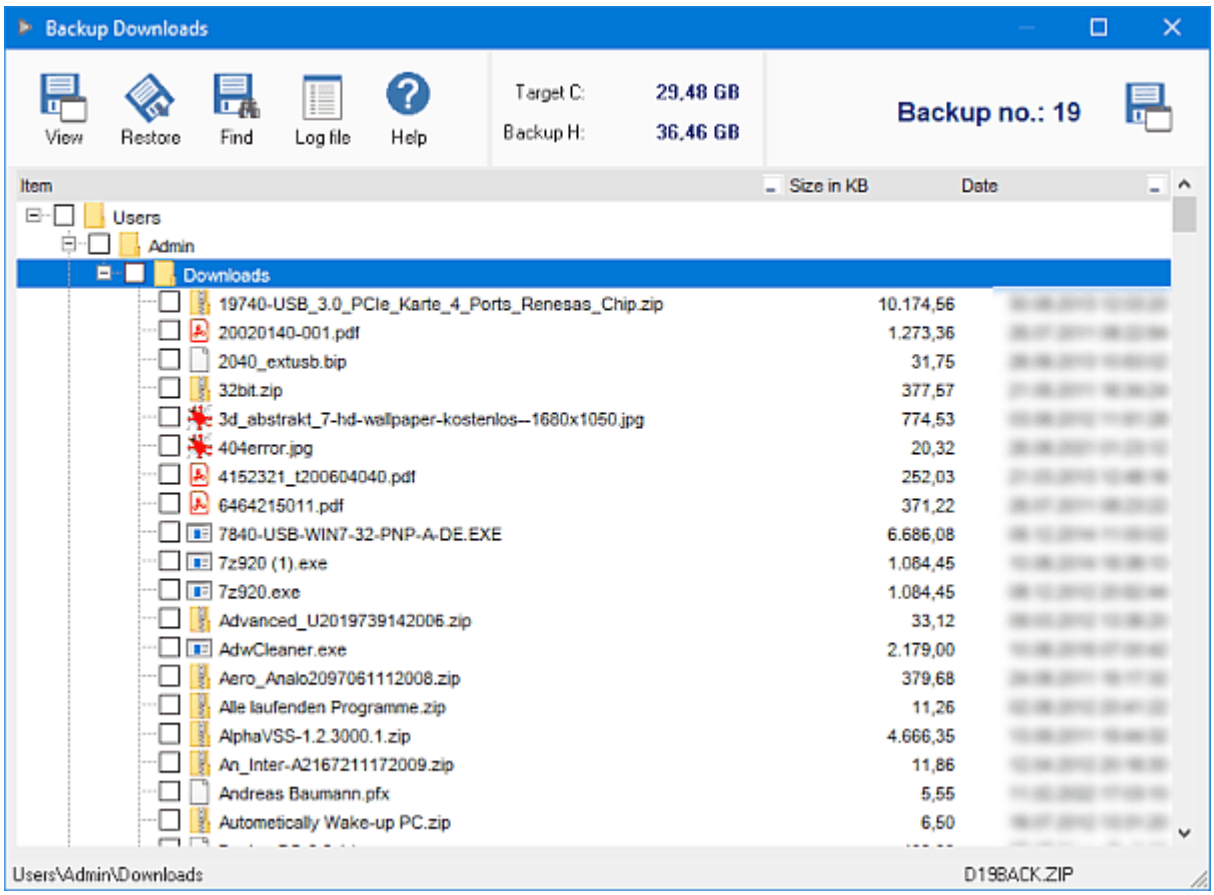


Displays the contents of your backup

- View Backup
  - View ZIP archive
  - View Backup Directory

1.1.5.1. View ZIP archive

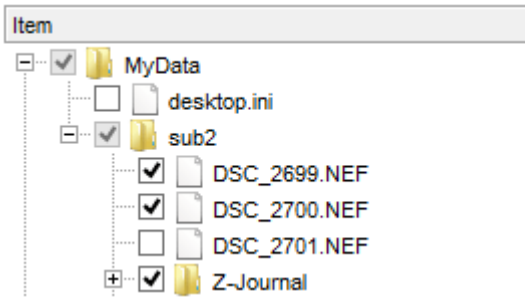
This window displays the contents of your backup. You can also open files from the backup and restore one or more files.



You can restore files to their original position or to another target location. You can flexibly restore files to different drives or directories.

The content of backup archives containing up to 200,000 files is displayed as a tree view (current help displayed). Backup archives containing more than 200,000 files will be displayed in a list view due to memory usage.

Select items to restore:



Tick the checkboxes for the items you want to restore.

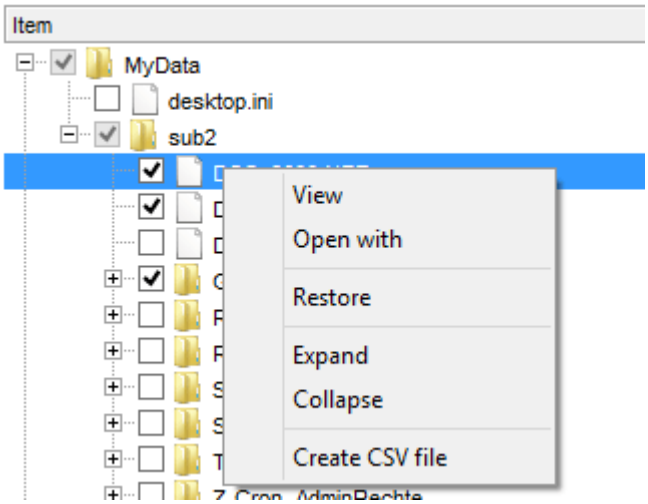
The number of selected files and the needed drive space is shown in the status bar. You can also select files v

Double click:

If a file is associated with an installed application (e.g. a Microsoft Wort file), it can be opened directly from the

Right click:

Opens the context menu to open a file.



The button bar

Open selected item

Restore selected item(s)

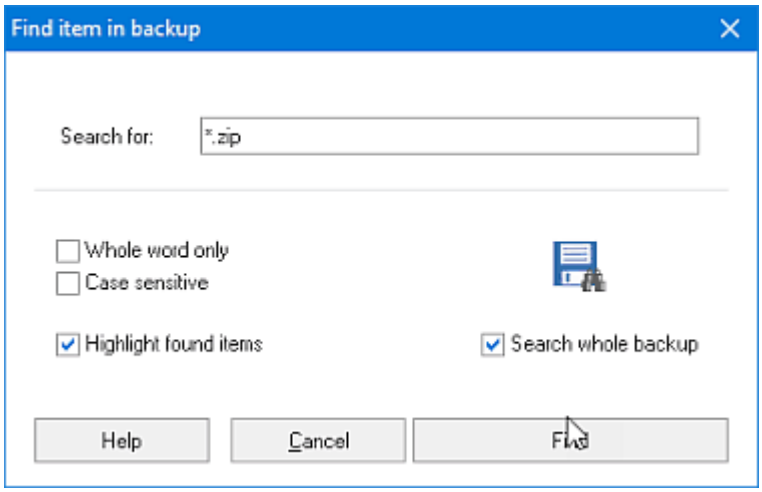
Search for file or directory in the backup

This help window

Open selected item
If a file is associated with an installed application (e.g. .doc is a Microsoft Word file), you can open the file with this program by clicking the View-button or by double-clicking it.

Restore
After you have selected one or more files to restore, you can restore them by clicking the restore button.

Find file or directory in the backup
Z-DBackup offers an easy feature to search for files in the backup. Found items are checked and can thus be restored easily.



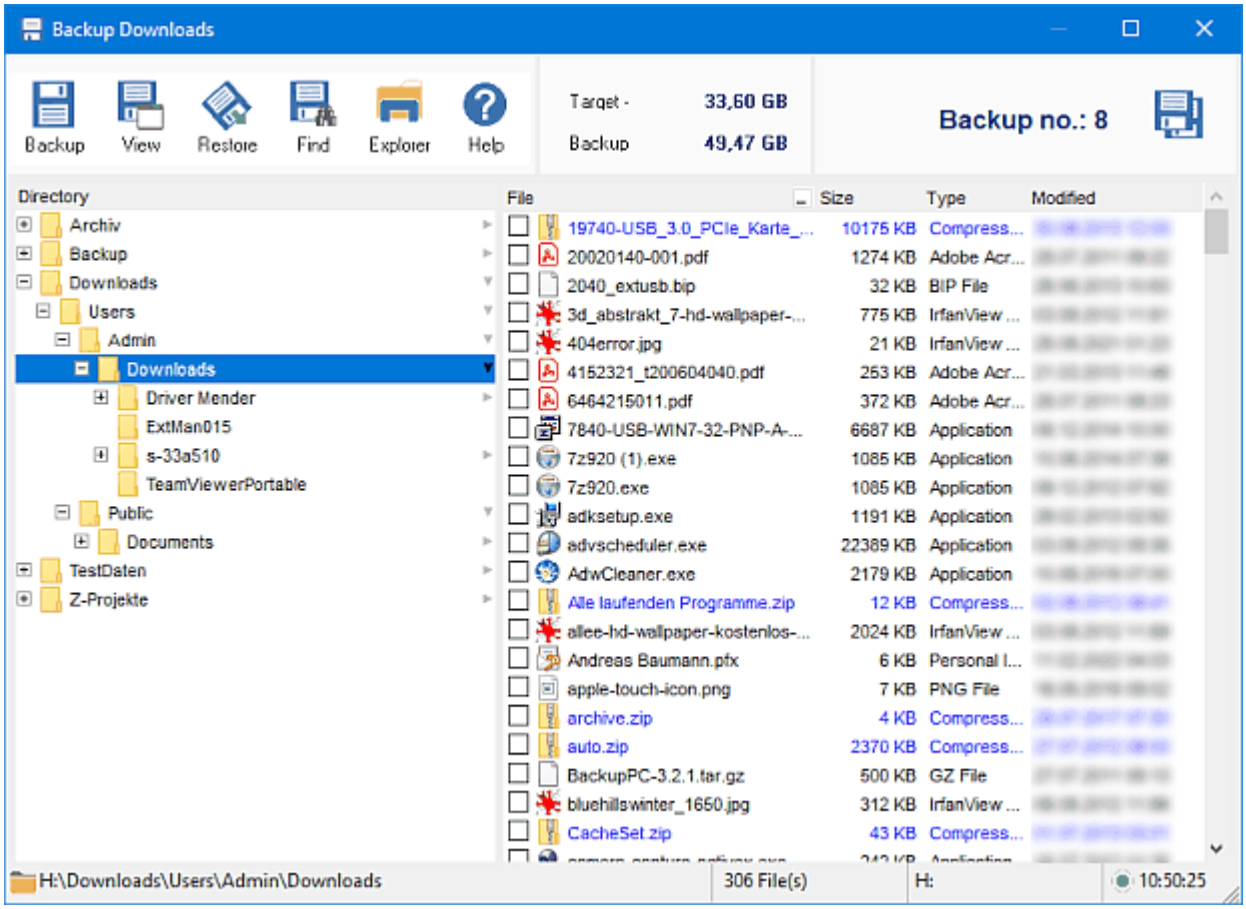
You can use complete file names (without path) or beginnings of file names as search terms. DOS wildcards (*, ?) are not supported.

Displays the contents of your backup

- View Backup
  - View Backup Directory

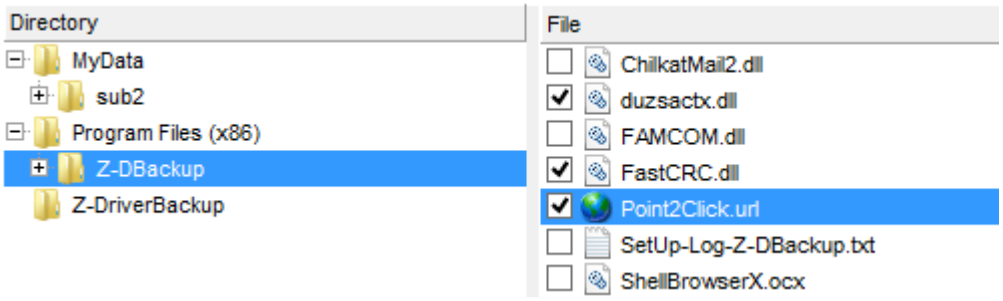
1.1.5.2. View Backup Directory

This window displays the contents of your backup. You can also open files from the backup and restore one or more files.



You can restore files to their original location or to any other drive or directory

Select items to restore

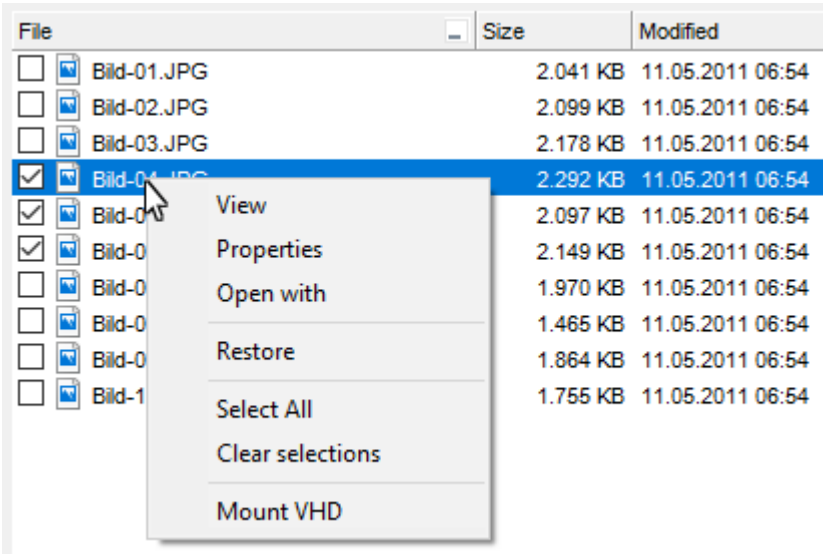


Tick the checkbox next to the files that you want to restore.

The number and total size of the selected files are shown in the status bar. You can also use the search feature to select files.

Double-click
If a file is associated with an installed program (e.g. .doc is a Microsoft Word file) you can open the file with this program by double-clicking it.

Right click
opens the Windows Explorer context menu.



View: Opens the file with the default program for its file type. VHD files may be automatically mounted and opened by this function depending on the system.

Properties: Opens the properties dialog for the file.

Open with: Opens the file with a program of your choice.

Restore: Restores the selected files.

Mount VHD: Mounts a selected VHD file. Afterwards the VHD file can be opended in the Windows Explorer where you can search its content and restore/copy single files to different location.

The button bar

Open selected item

Restore selected items

Find file or directory in the backup

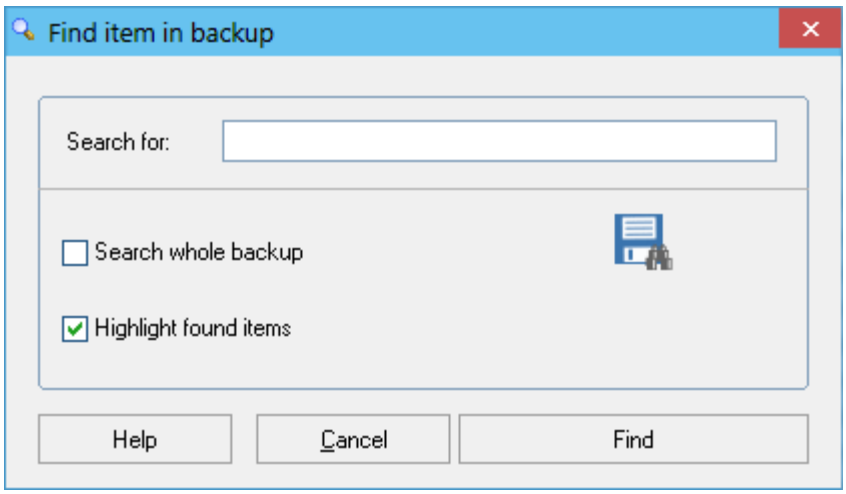
Opens the selected directory in the Windows Explorer or a custom file explorer
(A custom file explorer to use can be set in the general program settings)

This help window

Open selected item
If a file is associated with an installed program (e.g. .doc is a Microsoft Word file) you can open the file with this program by selecting it and clicking the View-button or by double-clicking it.

Restore
You can restore the selected items by clicking on this button.

Find file or directory in the backup
Z-DBackup has a simple way of searching for files in the backup. Found items are selected and can thus be restored easily.



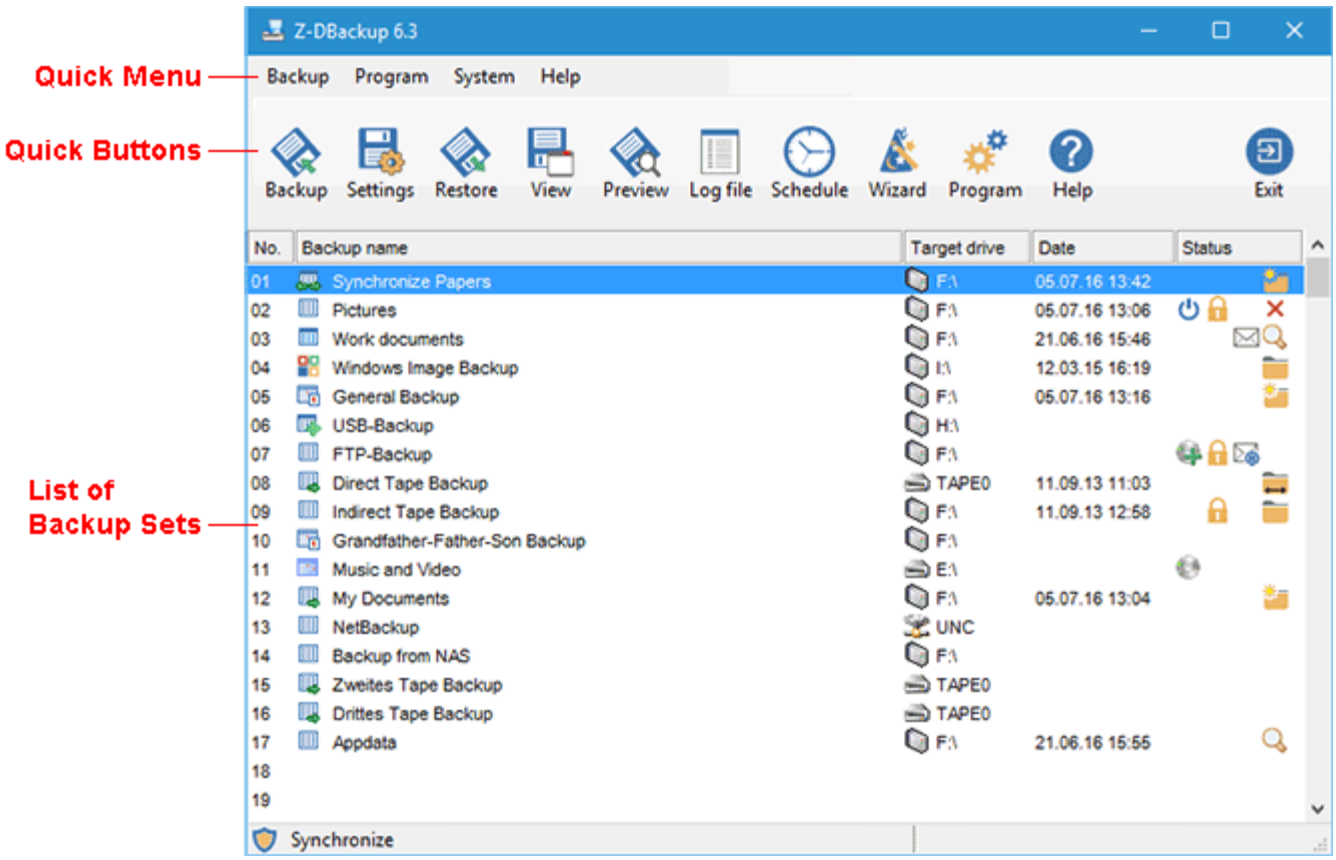
You can use complete file names (without path) or parts of file names as search terms using wildcards (*, ?).

Displays the contents of your backup

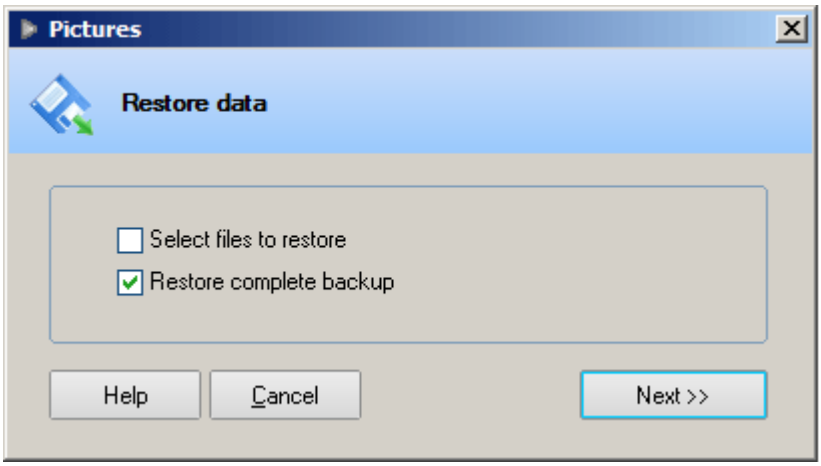
- View Backup
  - View ZIP archive

1.1.6. Restore

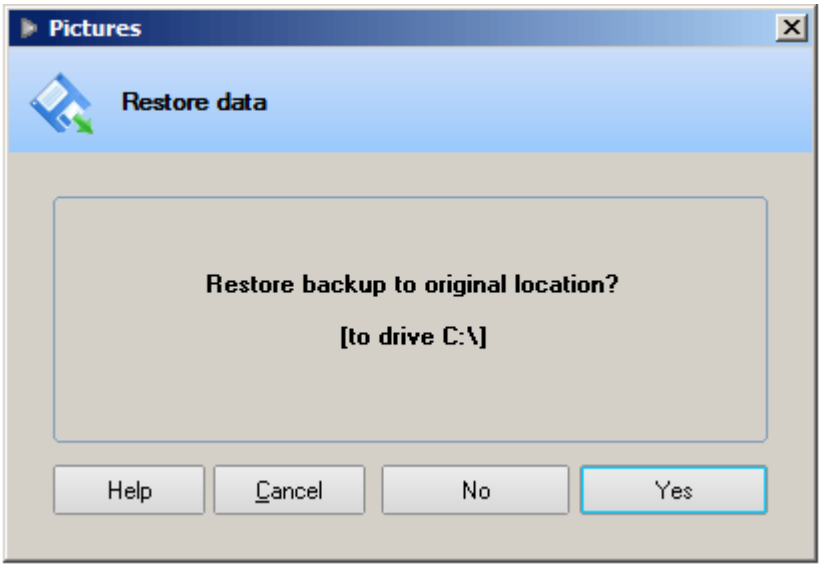
To select a backup set for a restore, just select the backup set in the list. You can also move the selection wi the cursor keys.



You can start the restore by clicking on the Restore button. You can restore either the whole backup or you can select certain files in the backup.

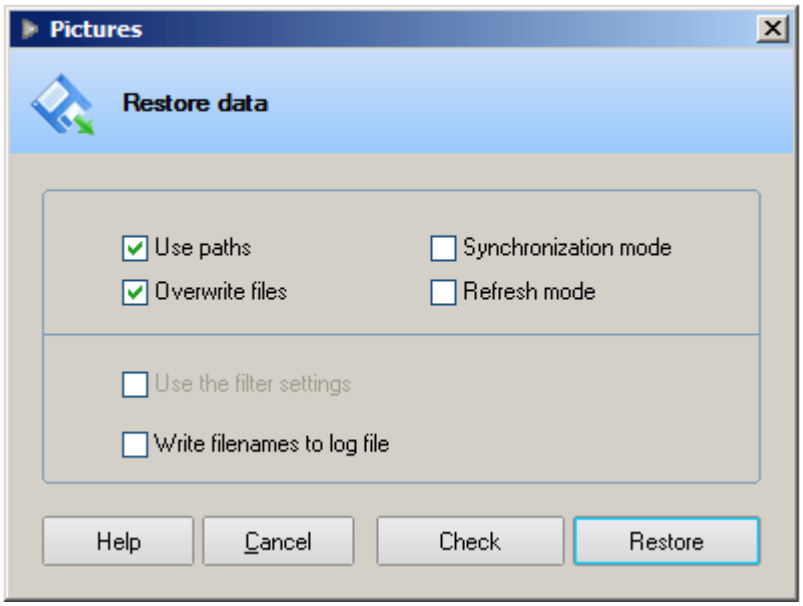


You can restore the data either to its original location or to any other drive or directory.



Yes	The data is restored to its original location.
No	Select a drive and directory for the restore.

After you selected the directory you want to restore the data in, you can choose further restore options:



The following options are pre-set for a "normal" restore

Use paths The relative paths of the files in the backup are used. Files are restored with the folder structure they lie in, subdirectories are created if they are not already there.

Overwrite files Files that exist in the location are overwritten.

For synchronization between two computers, there are some more options:

Synchronization mode Only missing and older files than those present in the backup are restored.

Refresh mode Only older files than those present in the backup are restored. Missing files are not restored.

Use filter settings Only files that match the filters set in the backup settings are restored.

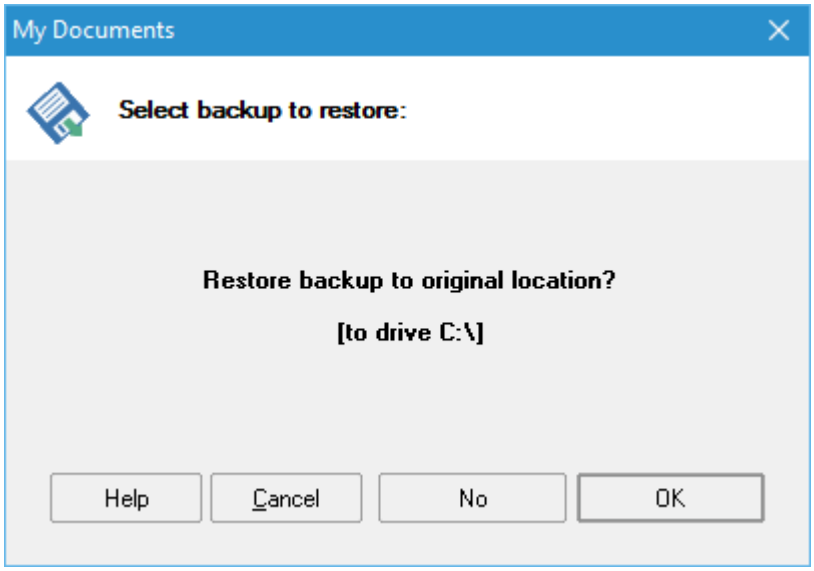
Write filenames to log file The file names of restored files are written to the log file.

Restore	Start Restore
Check	Test Restore; no data is written to the hard disk.

The test button is to check if backups on removable mediums, such as floppy disks, are still working and could be restored, without actually restoring them.

1.1.6.1. Directory

You can restore a backup either to the original location or to any other desired target drive and directory:



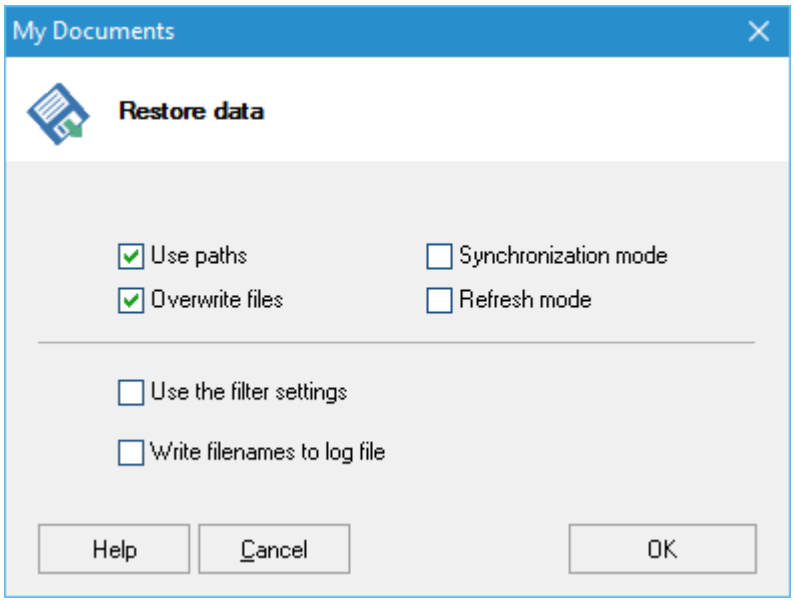
OK	**The data is restored to its original location.**
No	**A dialog is shown in which you can select the target drive and directory for the restore.**

To restore data to its original location, confirm the dialog by clicking OK. If you want to specify a different drive/directory, you can select your desired target location by clicking on the No button.

All used trademarks and company names are subject to copyright of their respective companies.

1.1.6.2. Options

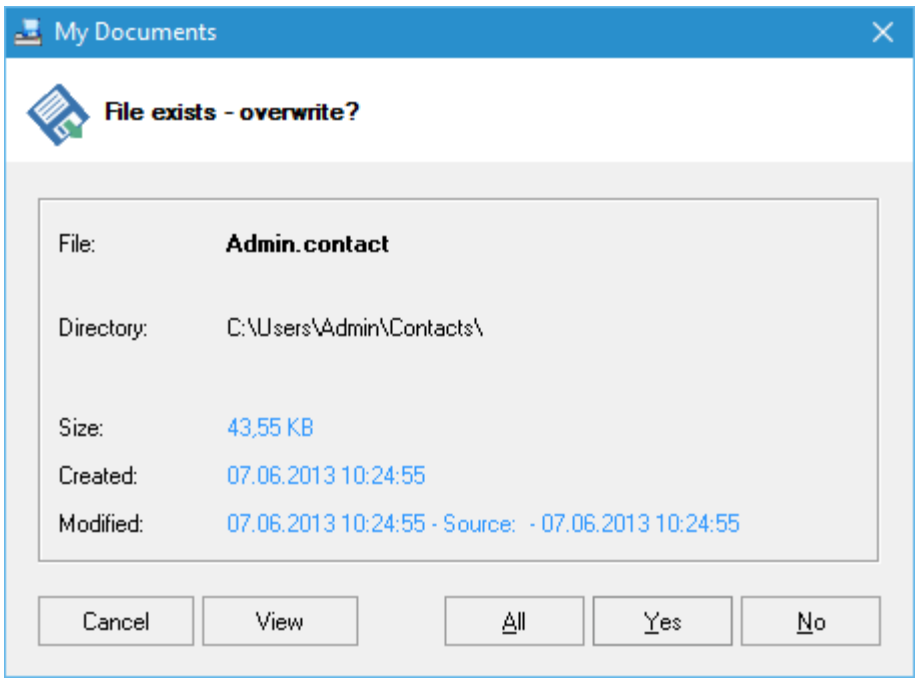
After you selected the directory you want to restore the data in, you can choose further restore options:



The following two options are selected by default for a "normal" restore:

The path information that is stored in the backup is used. Subdirectories that do not exist are

Existing files are overwritten. If this option is deactivated, the program will ask what to do
file with the same name as a file in the backup.



There are some additional options for synchronizing data between two computers:

Only missing or older files than those present in the backup are restored.

Only existing files that are older than those in the backup are restored.

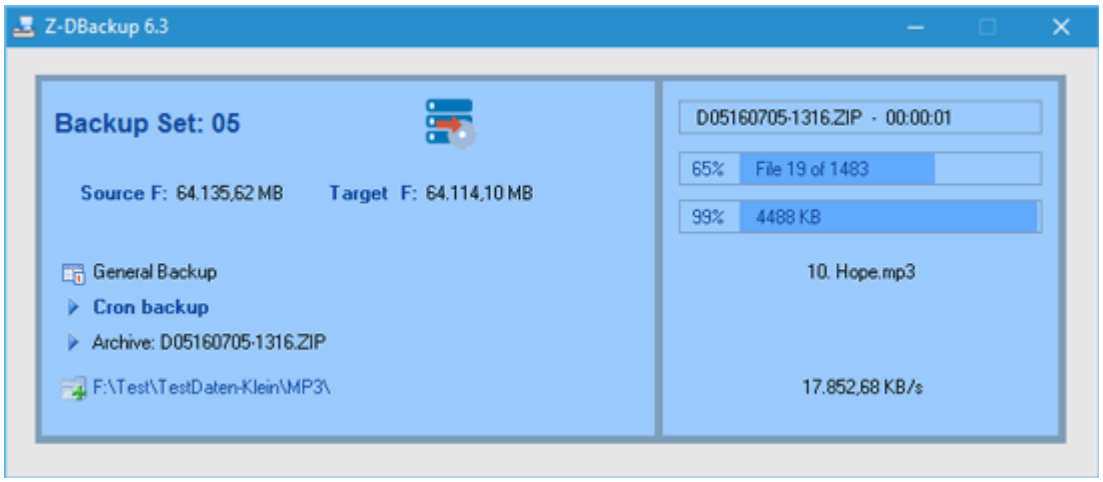
Only files that match the filters set in the backup settings are restored.

The file names of restored files are written to the log file.

Start Restore

1.1.7. Create Backup

After you have created a backup set, you can run it and create a backup. When you start the backup, the Z-DBackup shrinks to working size, i.e. the list of backup sets is hidden. The program first compiles the file list for the backup and then creates the backup archive. You can monitor the current status in the progress displays.



You can abort the backup process at any time by clicking the X button. Already created files (e.g. in multi-spanning mode) are then deleted.

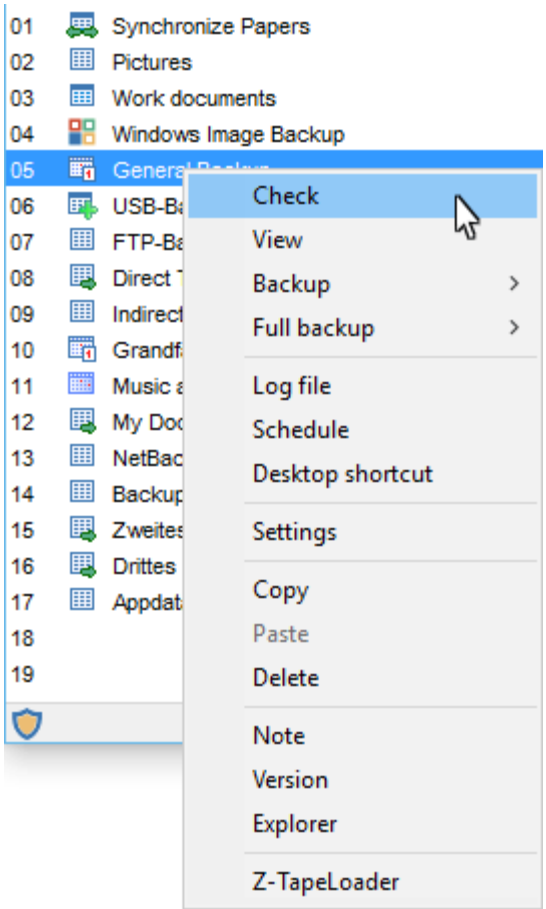
⚠ You can can only restore your operating system to a working state using a Image Backup

Backup Settings

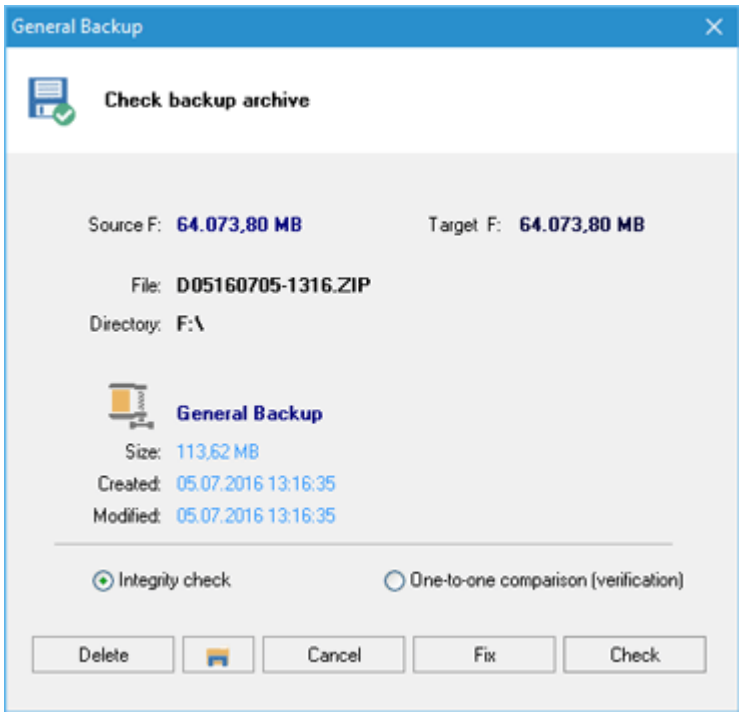
- Settings Window
- Backup Name and Medium
- Backup to NAS
- Backup to USB
- Backup to DVD-RAM
- Backup to Tape
- Backup Target - ZIP
- Backup Target - COPY
- Backup Target - TAPE
- Tape and Burner
- FTP
- Registry
- Delete old backups

1.1.8. Check Backup

If you right-click a backup set in the list, the context menu appears, which, among other option, offers you to check a backup file.



Check or delete backup file



Repair backup file

Additionally, Z-DBackup offers the option to fix broken backup archives. This feature tries to repair a damaged or corrupted backup file. Please make a copy of the original file before you use this feature!

Split backup archives (multi-spanning) cannot be repaired with this feature!

These links might be useful in a case of emergency:

https://www.zip-repair.com ZIP Repair
https://www.repairfile.com Advanced Zip Repair (AZR)

1.1.9. Backup Test Run

The test run feature enables you to easily test complex backup tasks while no files are actually copied and no backup archives are created.

Hard Link Analysis
Junction Points and Hard Links are a special NTFS feature to link to a directory from another location in the file system. In contrast to a simple .LNK shortcut, a junction point behaves just like any other directory in the Windows Explorer. During a backup, however, these practical hard links and junction points can severely slow down the backup process and increase the total amount of data unpredictably and exorbitantly.

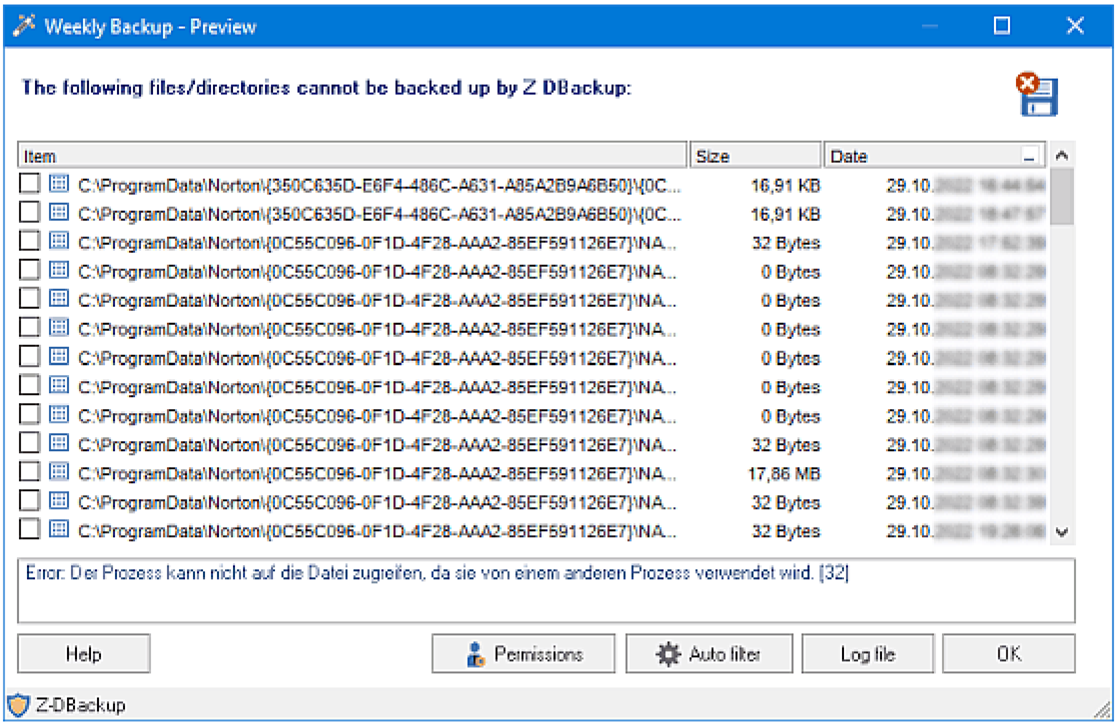
Z-DBackup can exclude hard links and junction points from the backup (this is the default setting). If this option is deactivated in the filter settings, a junction point analysis is done during the test run and the results are saved in the log file.

Filter Analysis

Z-DBackup can exclude files and directories from the backup with appropriate filter settings. These filters are evaluated during the test run and the results are saved in the log file.

FileLock Analysis

If some files cannot be accessed during the test run because they are locked by other applications or the Windows system, their names are saved in the log file and are also shown in the test run preview window:

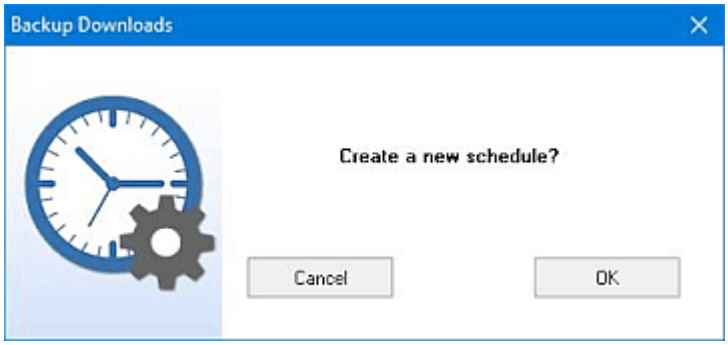


There are numerous files that are generally locked by the operating system or Internet Explorer which do not have to be included in a normal backup. These files and directories can be excluded from a backup by automatical or manual filters.

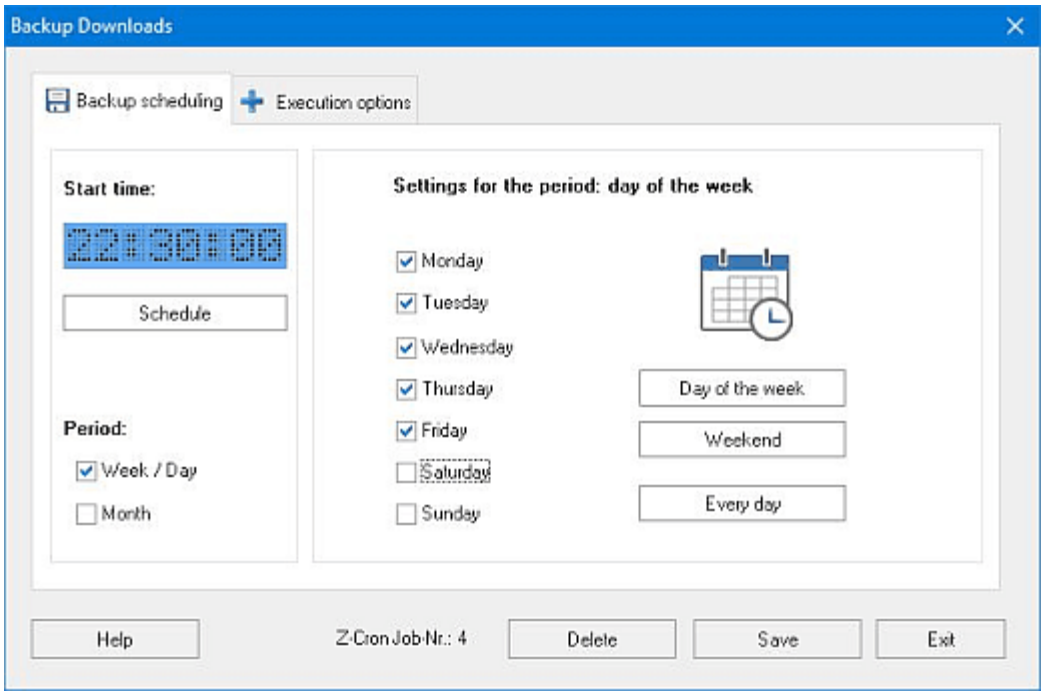
The add-on module Z-VSScopy enables Z-DBackup to access files that are open or locked by another application.

1.1.10. Scheduling

The add-on module Z-Cron ensures that backups are run automatically even if no user is currently logged in on the computer. The scheduler settings for a backup set can be accessed with the Schedule button in the Z-DBackup main window. A wizard opens which lets you configure the options for automatical backup. Confirm with **OK**.



Here you can specify at which times the backup should be run, e.g. weekly. Confirm with **OK**.



Backup Scheduling

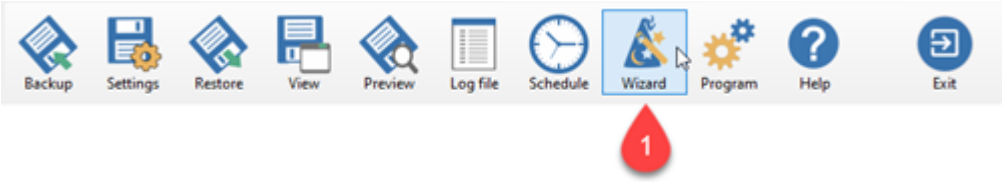
- **Scheduling - Z-Cron**
  - **Set Starting Time**
  - **Optional Parameters**
  - **User Permissions**
  - **Add-On Z-Cron**

- **Scheduling - Windows**
  - **Settings**
  - **User Permissions**
  - **Password**

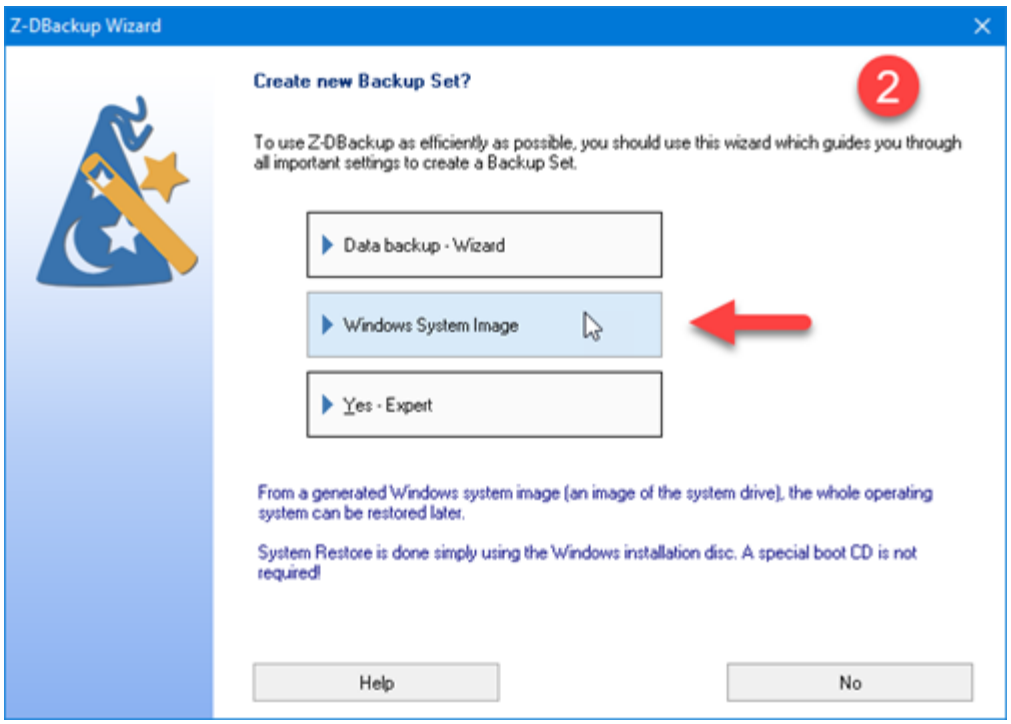
1.1.11. System Backup

With Z-DBackup you can create an image of your whole system and all internal drives. (from Windows Vista upwards)

Such an image of a drive is different from a normal backup of all files on that drive, in the way that it also includes information about the partition, file system and boot sector. A drive will also be backed up at a consistent state. An image of your Windows drive, can later be used to recover your whole operating system including all files and installed programs.



Experienced users and users with complex or large backup tasks can also edit all backup settings later in the program settings!



A window will open where you can create a new backup-set for an image backup, similar to the creation of a normal backup-set. Choose ***Windows system image***, go to the tab ***Souce*** and choose additional source drive if you wish

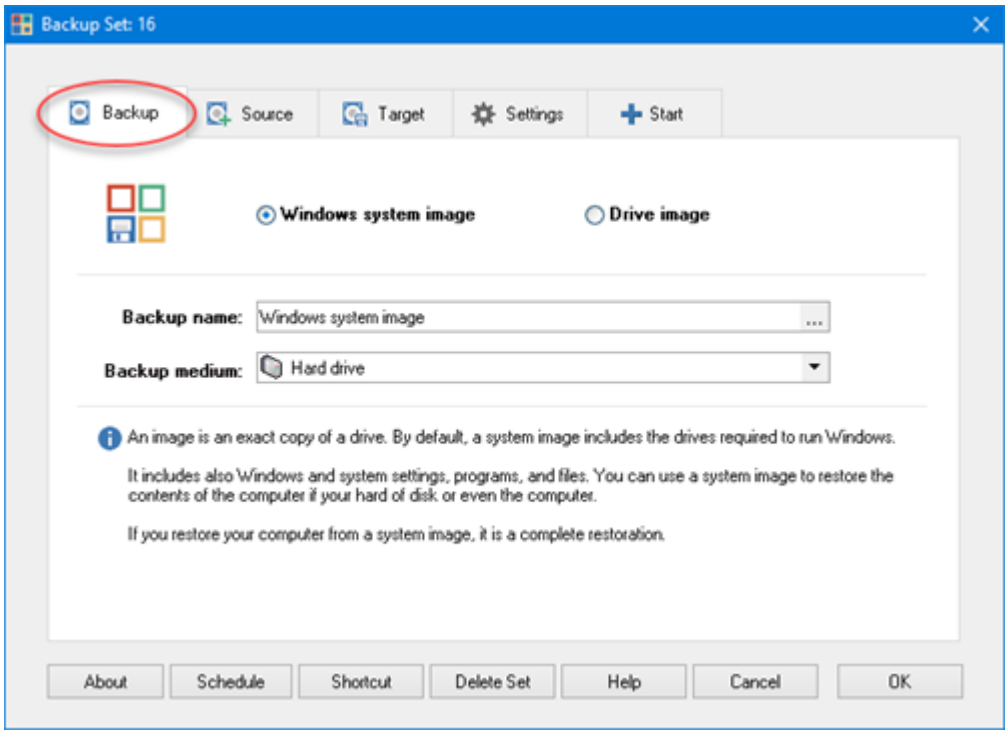
and then choose a target drive under the tab Target.

System Backup

- **Windows System Backup**
  - Backup
  - Source
  - Target - HDD
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - Windows Server
  - System Restore

1.1.11.1. Backup

With Z-DBackup you can create an image of your whole system and all internal drives. (from Windows Vista upwards) Such an image of a drive is different from a normal backup of all files on that drive, in the way that it also includes information about the partition, file system and boot sector. In particular an image of your system drive C: can be used to recover your whole operating system.



Windows system image

A Windows system image backup creates an image of all drives that are necessary for the operation of Windows and all installed programs. This image can then be used to restore the complete operating system with all installed programs and all files. This allows you to quickly restore your old computer system on a new hard drive from this image, in case of a severe software problem (e.g. caused by a virus) or if your hard drive fails. A lot of time can be saved this way compared to installing Windows by hand and having to reinstall all programs and updates.

The drives needed by windows and all installed programs are automatically selected as source drives. You can select additinal drives to be included in the backup.

⚠ **Only one image backup, which may contain the images of multiple drives, can be created per volume on a hard drive, USB hard drive or RDX hard drive. See target drive**

Restore

To restore Windows from an image you either need a Windows installation disc or a system repair disc you can boot from. A system repair disc can be created from within Z-DBackup: Menu **System → System repair disk**

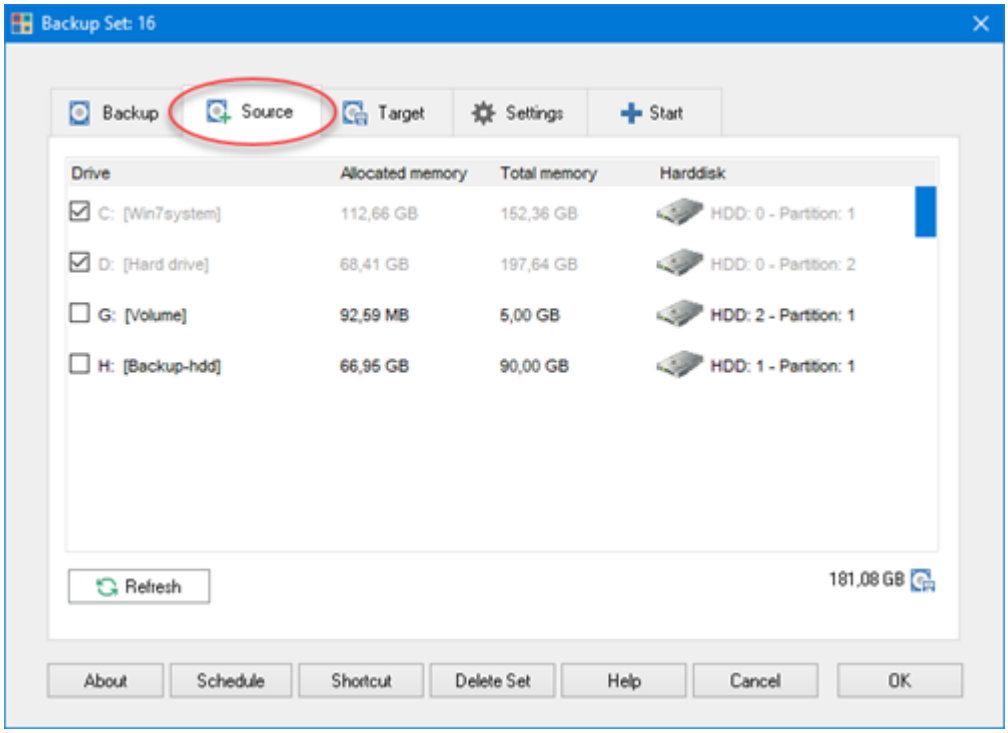
Info : system recovery

Windows System Backup

- System Backup
  - Source
  - Target - HDD
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - Windows Server
  - System Restore

1.1.11.2. Source

Overview of all drives that can be selected as a source



The selected drives will be included in the backup. You can select additional drives if you want to. The preselected drives (in grey) are those that are needed for the correct operation of windows and all installed programs. These drives cannot be deselected. The backup image will also include hidden partitions that are part of the Windows installation such as the EFI System Partition.

The disc space needed for the backup ist displayed in lower right corner.

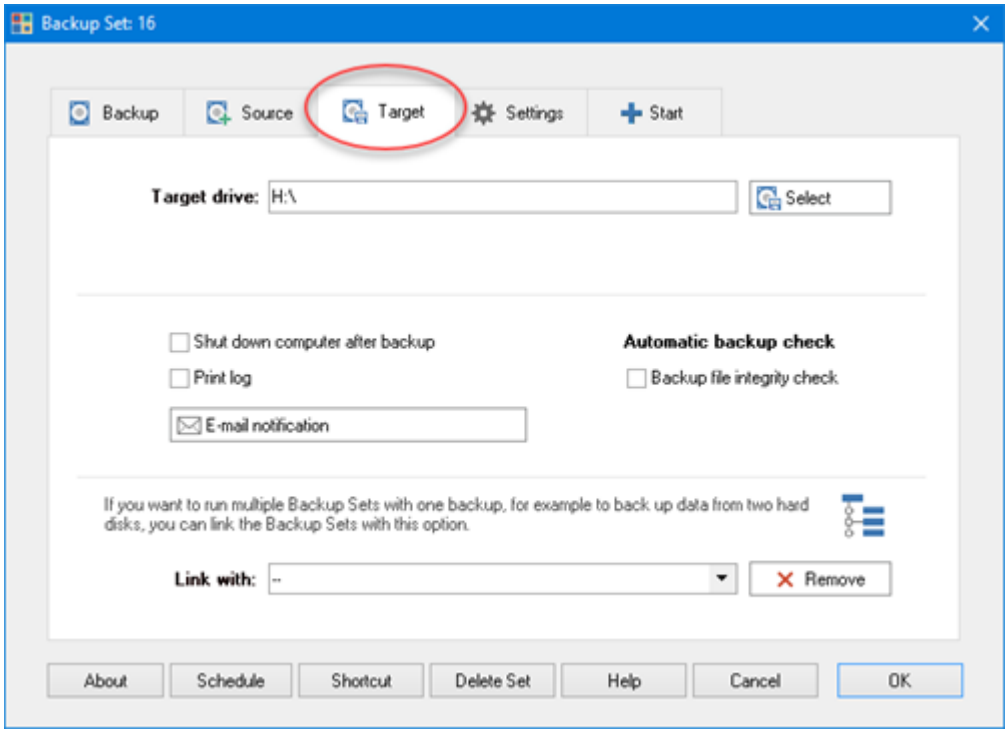
Windows System Backup

- System Backup
  - Backup
  - Target - HDD
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - Windows Server

- **System Restore**

1.1.11.3. Target - HDD

Selection of the target drive.



The drive images will be saved to the selected drive.For every source drive one image file will be created, containing all data from that drive.

Note:
Only one image backup, which may contain the images of multiple drives, can be created per volume on a hard drive, USB hard drive or RDX hard drive.

You can't save multiple image backups onto one target drive. If one image backup (containing one or more images) has already been saved to the target drive, this image backup will get overwritten by a subsequent image backup.

On a system hard drive only one backup image file (for each drive) can be created. On consecutive system image backups those files that changed since the last backup will be written in the already existing image file.
Multiple backup image files of one source drive can only be created on network drives.

Examples:

- An image of drive C: is saved on a drive doing a backup.
  Afterwards an image of drive D: gets saved to the same target drive by a different backup. The already existing image of drive C: will be overwritten by the image of drive D:.
  The image of drive C: no longer exists.

- An image of drive C: is saved on a drive doing a backup.

Later the same backup gets started again. This time only the files that changed since the last backup will be saved and added to the already existing image of drive C: (incremental backup).
The backup doesn't take as long. Every 15 backups another full backup will be done automatically.

To save an image of drive C: and drive D: to the same target drive both images have to included in the same image backup. If you want to keep multiple images of the same drive it is advisable to use a different hard drive for every image. That way you won't loose all images at once in case of a hardware failure, damage or theft.

The limitation, one image backup per target drive, doesn't exist if your target drive is a network drive. On a network drive multiple images of the same drive can be saved to different subfolders.

Be sure that the target drive has enough free space available.

The backup image has to be saved to a hard drive which doesn't contain any of the source drives.

Shutdown computer

Use this option if you want the computer to be shut down automatically after backup.

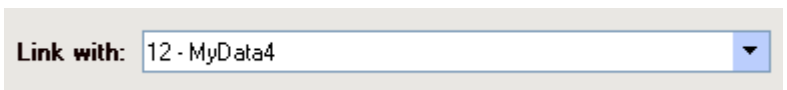
Print Log File

Activate this option if the log file for the backup should be printed out automatically after backup.

E-Mail Notification

Z-DBackup can send e-mails to a user-defined e-mail address. This option is especially useful for system administrators who want to use Z-DBackup on remote servers and still be notified about all backup results. The mail contains the time, date and backup log file. You can configure the sender and recipient data in the program settings – e-mail settings.

Link with another backup set



If you want several backup sets to start directly after one another (as one job) e.g. to copy data from two different drives or partitions, you can link backup sets with this option.
This link is a **forward link**, i.e. A link from the current backup set will point to the backup set selected here.
The backup set you select here will be started automatically **after** the current backup set has finished its backup task.

You can only link one backup set with one other backup set directly, but you could link the second backup set to a third one and thus concatenate as many backup-sets as you have.

Example:
You have 4 Backup Sets: Backup Set 1 to Backup Set 4

You link **Backup Set 4** with **Backup Set 2** (in the Settings of **Backup Set 4**).

The link can be imagined like this: **Backup Set 4 → Backup Set 2**

Now, when Backup Set 4 gets started, Backup Set 2 will start automatically after Backup Set 4 has finished.

You then link **Backup Set 2** with **Backup Set 3** (in the Settings of **Backup Set 2**)

The links between the 3 backup sets can be imagined like this: **Backup Set 4 → Backup Set 2 → Backup Set 3**

Now, when Backup Set 4 gets started, Backup Set 2 will start after Backup Set 4 hast finished and Backup Set 3 will start after Backup Set 2 hast finished.
Also, whenever Backup Set 2 gets started, Backup Set 3 will start automatically after Backup Set 2 has finished.

The shutdown option is disabled for linked backup sets because only the last backup set of one link chain can shut down the computer.

In the freeware version it is not possible to batch-process linked backup sets, i.e. only the called backup set is processed!

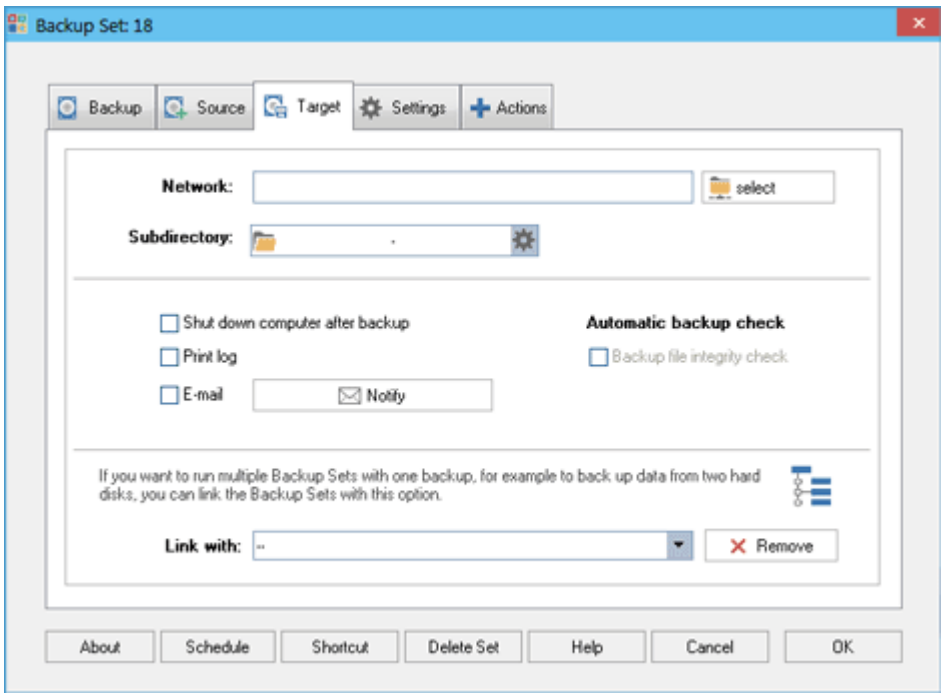
Windows System Backup

- System Backup
  - Backup
  - Source
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - Windows Server
  - System Restore

1.1.11.4. Target - Network

System Image Backup – Network Target Drive

Select the target drive.



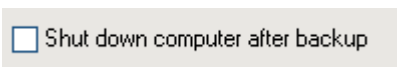
The backup image will be saved on the selected drive. For every source drive one image file will be created, containing all data from that drive.

Multiple backup image files of one source drive can only be created on network drives. To do so you can choose a name format for the subdirectory the image files of each backup should be stored in.

Be sure that the target drive has enough free space available.

The backup image has to be saved to a hard drive which doesn't contain any of the source drives.

Shutdown computer



Use this option if you want the computer to be shut down automatically after backup.

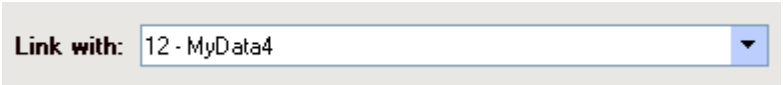
Print Log File

Activate this option if the log file for the backup should be printed out automatically after backup.

E-Mail Notification

Z-DBackup can send e-mails to a user-defined e-mail address. This option is especially useful for system administrators who want to use Z-DBackup on remote servers and still be notified about all backup results. The mail contains the time, date and backup log file. You can configure the sender and recipient data in the program settings – e-mail settings.

Link with another backup set



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You link **Backup Set 4** with **Backup Set 2** (in the Settings of **Backup Set 4**).

The link can be imagined like this: **Backup Set 4 --> Backup Set 2**

Now, when Backup Set 4 gets started, Backup Set 2 will start automatically after Backup Set 4 has finished.

You then link **Backup Set 2** with **Backup Set 3** (in the Settings of **Backup Set 2**)

The links between the 3 backup sets can be imagined like this: **Backup Set 4 --> Backup Set 2 --> Backup Set 3**

Now, when Backup Set 4 gets started, Backup Set 2 will start after Backup Set 4 hast finished and Backup Set 3 will start after Backup Set 2 hast finished.
Also, whenever Backup Set 2 gets started, Backup Set 3 will start automatically after Backup Set 2 has finished.

The shutdown option is disabled for linked backup sets because only the last backup set of one link chain can shut down the computer.

In the freeware version it is not possible to batch-process linked backup sets, i.e. only the called backup set is processed!

Windows System Backup

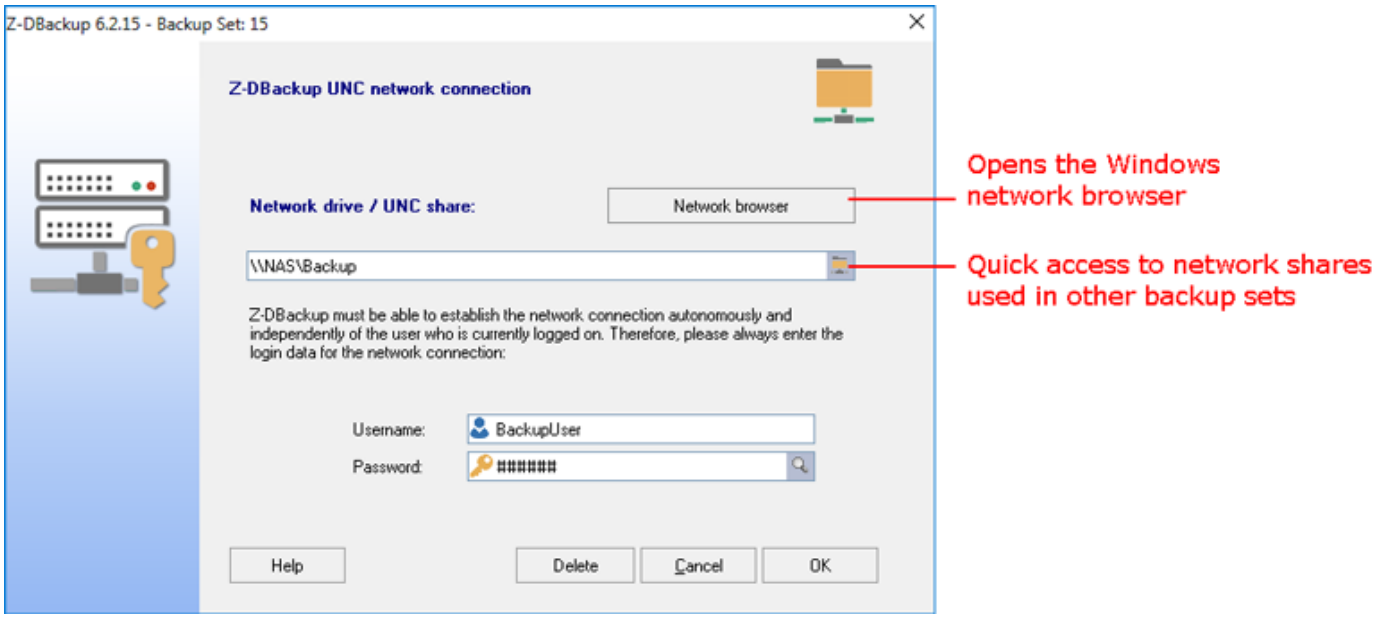
- **System Backup**
  - **Backup**
  - **Source**
  - **Target - HDD**
  - Target - Network
    - **UNC**
  - **Settings**
  - **Before/After**
  - **Image Catalog**
  - **Image Explorer**
  - **RDX**
  - **Windows Server**
  - **System Restore**

1.1.11.4.1. UNC

Z-DBackup must be able to establish a network connection on its own and independently of the currently logged-on user and therefore uses UNC paths to access remote resources such as network drives.

YouTube Video - Backupto NAS / network location

Example
A directory called *Backup* is a shared resource on a NAS called *NAS*. A user account named *BackupUser* was created on the NAS and has the appropriate user permissions.



This button shows the stored password as normal text. If this button is not displayed, the option "Hide button to display passwords" was activated in the program settings.

The passwords for use with Z-DBackup can contain a maximum of 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols _ ***! % / & ( ) ? . - ; + : @ * # [ ] { } € § | ~ = $ "*** (no spaces). Please keep that in mind when creating the backup user account on your network computer.

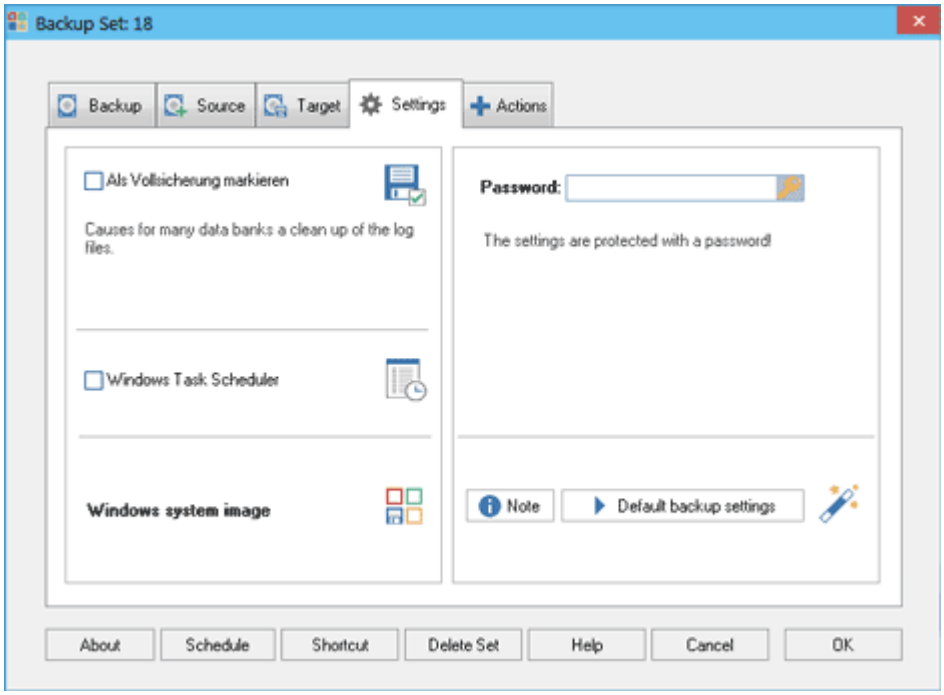
Windows System Backup

- **System Backup**
  - **Backup**
  - **Source**
  - **Target - HDD**
  - **Target - Network**
  - **Settings**
  - **Before/After**
  - **Image Catalog**

- **Image Explorer**
- **RDX**
- **Windows Server**
- **System Restore**

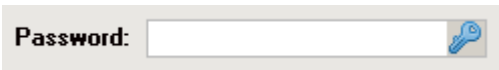
1.1.11.5. Settings

Further backup settings.



Mark as full backup
If this option is checked, each file's history is updated to reflect that it was backed up and the log files of databases may be truncated.

Security
The backup settings can optionally be protected with a password.



The password can contain one to 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols ***!%/&()?.-;+:***@*<>#. The password is case-sensitive, i.e. upper- and lowercase letters are different. Generally, longer passwords (eight or more characters) are more secure than shorter passwords, and password containing letters and numbers are more secure than those containing only letters or only numbers.

Windows Task Scheduler
For each backup set, you can choose between Z-Cron and Windows Task Scheduler for scheduled backups. Select this option if you want to use Windows Task Scheduler.

Backup Notes and Default Settings

Note
With this button, you can add a textnote to a backup set. The notes can also be accessed from the context menu in

the main window. A note can be shown as a message on the screen before or after a backup with this backup set!

Default Settings

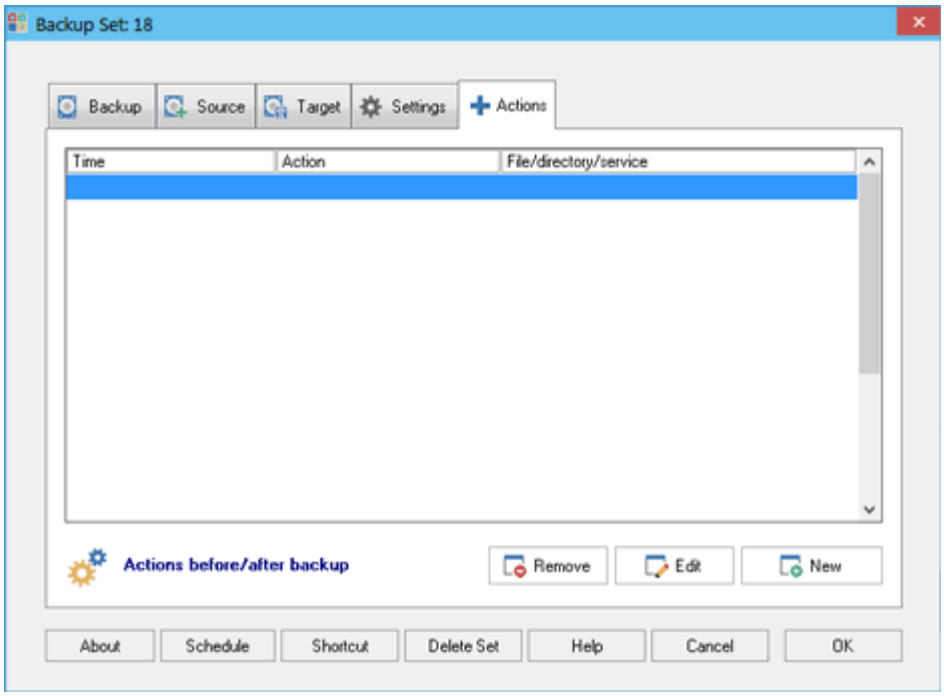
This button resets the backup set to the default settings.

Windows System Backup

- System Backup
  - Backup
  - Source
  - Target - HDD
  - Target - Network
    - UNC
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - Windows Server
  - System Restore

1.1.11.6. Before/After

Often, one needs to have certain programs, system services or batch files started or stopped before the backup begins or after it is finished. For that reason, an action list is integrated in Z-DBackup.



Action list
The action list shows all actions that you have defined. The listed actions are run in the same order in which they are shown in the list (before or after the backup, according to your configuration). Up to 20 actions can be created.

Remove
Lets you remove selected actions from the list.

Edit
If you want to edit an existing action, select it in the list and click Edit.

New/Create
Lets you add a new option to the list.

To select an action, just click the entry in the list. You can also use the arrow keys to move the selecti double-click it.

You can delete actions by selecting them and the pressing Remove entry underneath the action list.

Context Menu

 A right click into the action list opens the context menu which contains the following options.

Option: **Edit**

Lets you edit the action.

Option: **Run**

Test your saved settings.

Option: **Move up**

Moves the selected action up in the list by one position.

Option: **Move down**

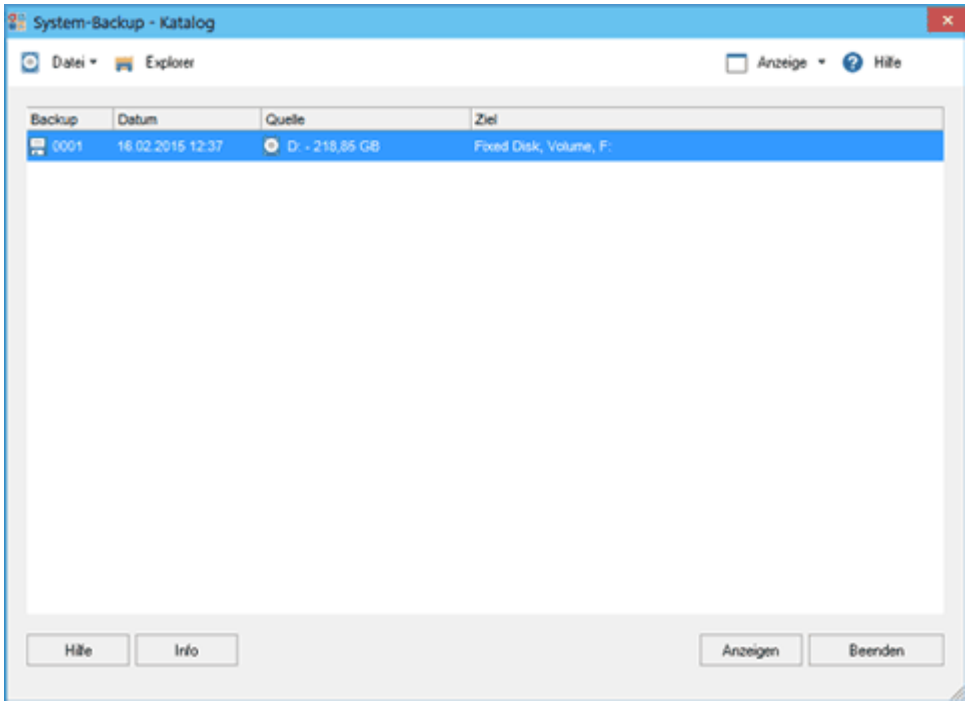
Moves the selected action down in the list by one position.

Windows System Backup

- **System Backup**
  - **Backup**
  - **Source**
  - **Target - HDD**
  - **Target - Network**
    - **UNC**
  - **Settings**
  - **Image Catalog**
  - **Image Explorer**
  - **RDX**
  - **Windows Server**
  - **System Restore**

1.1.11.7. Image Catalog

This list contains the drive images created with a backup.You can mount an image from the list, browse its content and copy files and folders from this image to your computer.



An image backup catalog file is stored in the hidden folder *"System Volume Information"* on your system hard drive containing the Windows installation. This cataloge file contains informations about every image backup you performed. The window above displays the information contained in the cataloge and gets opened when you select a backup-set in Z-DBackup with which a drive image has been created and then hit *'View'* or *'Restore - Select files to restore' .*

In the default view only the most recent image of each drive is displayed, but you can choose to display the backup information of all previous images. You can mount the most recent image of a drive and allocate a drive letter to it. This allows you to browse the image like a normal drive and copy single files from the image to your computer without having to restore the whole drive from the image.

⚠ Note that only the most recent image of every drive can be mounted. For older images only certain information about the backup can be displayed.

File
→ **Mount:** The selected image can be mounted and you can choose a drive letter.
→ **Info:** Shows additional information about the selected image.

Explorer
Opens the Windows Explorer

Display

→ **Most recent images:** Only displays the most recent images created by the last backup. (default)
→ **Display all:** Every image created by a backup will be displayed in the list. Note that only the most recent image of every drive can be mounted. For older images only certain information about the backup can be displayed.

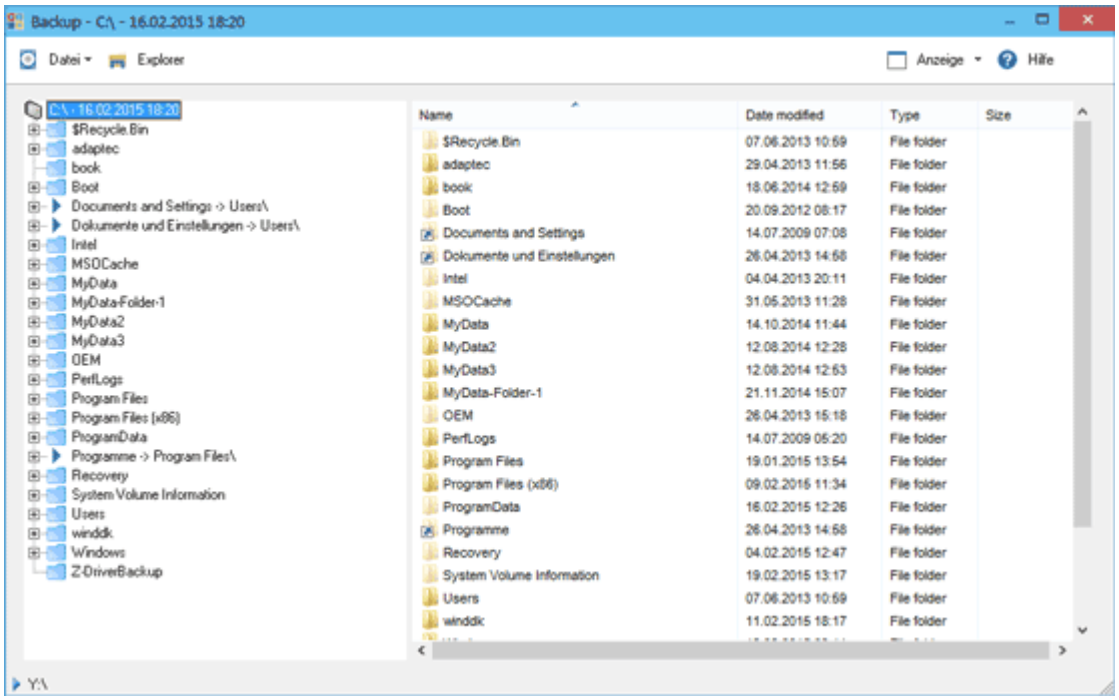
Mount and browse an image
Click on ***View*** to automatically mount the selected image an browse its content. You can then copy files and folders from the image to a location on your computer.

Windows System Backup

- **System Backup**
  - **Backup**
  - **Source**
  - **Target - HDD**
  - **Target - Network**
    - **UNC**
  - **Settings**
  - **Before/After**
  - **Image Explorer**
  - **RDX**
  - **Windows Server**
  - **System Restore**

1.1.11.8. Image Explorer

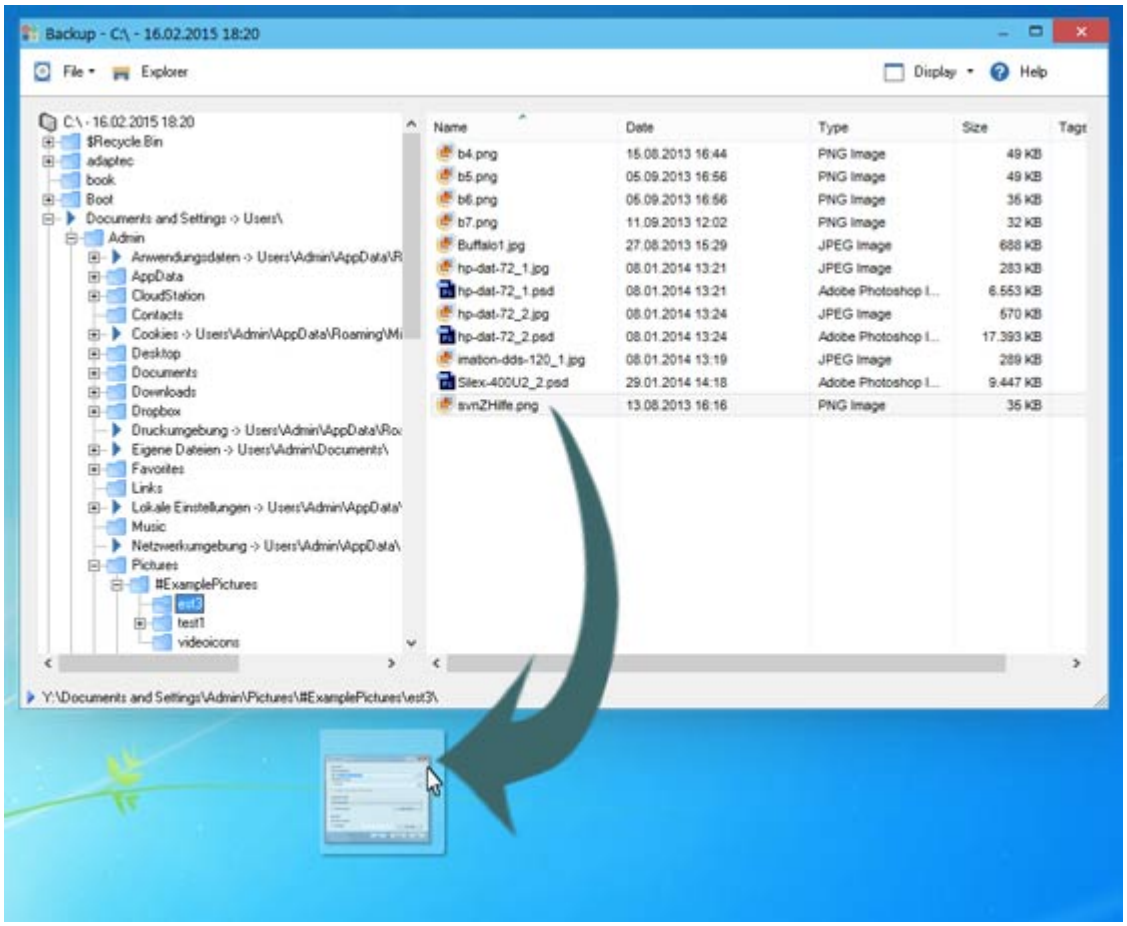
The explorer shows you the files contained in the mounted drive image.You can browse the content and copy one or multiple files to your hard drive.



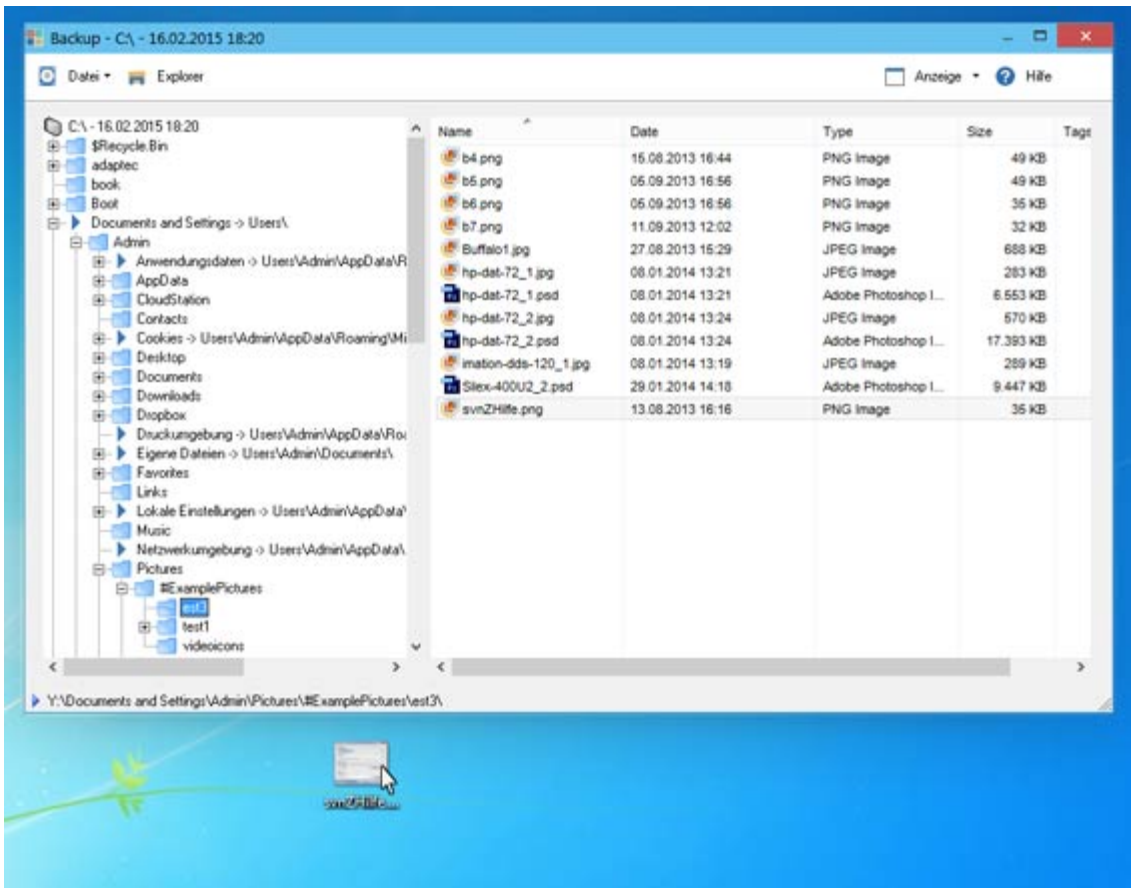
Restore single files from the image
You can simply copy files from the image to a desired location on your computer. Just select the files in the explorer and drag them to the location of your choice (e.g. the desktop).

Example:
We copy a file from the image to the desktop.

Select the file in the explorer and drag it onto the desktop.



The file gets copied to the desktop.
Done.



Windows System Backup

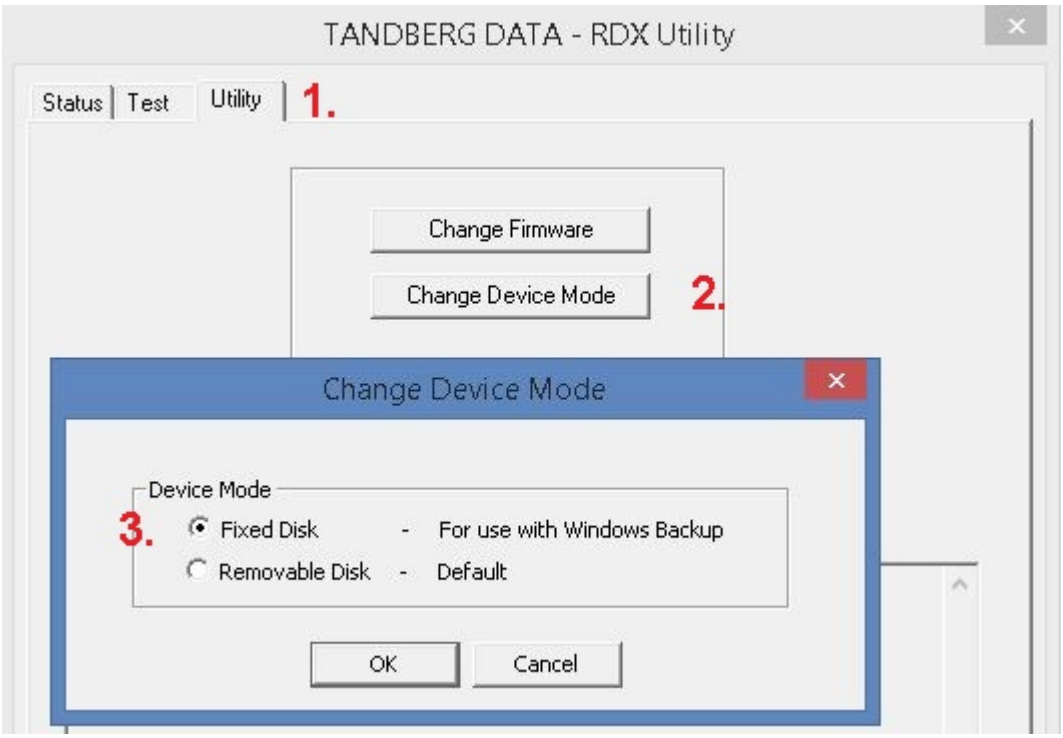
- System Backup
  - Backup
  - Source
  - Target - HDD
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - RDX
  - Windows Server
  - System Restore

1.1.11.9. RDX

System image backup with Z-DBackup and RDX®

The Fixed Disk Mode of the RDX QuikStor® system enables the use of RDX mediums for Windows® System Backups with Z-DBackup

Using an RDX disc like a normal hard drive - Fixed Disk Mode
The RDX-Drive can be used in the Fixed Disc Mode or in the Removable Disc Mode. To be able to use an RDX QuikStor® drive as the target drive for a system image backup you have to run the drive in Fixed Disc Mode. The mode of an RDX QuikStor® drive can be changed with the **RDX Utility** program supplied by TANDBERG DATA.



Eject RDX medium
Create an entry with the command **Eject target medium** in the list **Actions Before/After Backup** to eject the RDX medium after the backup.

Windows System Backup

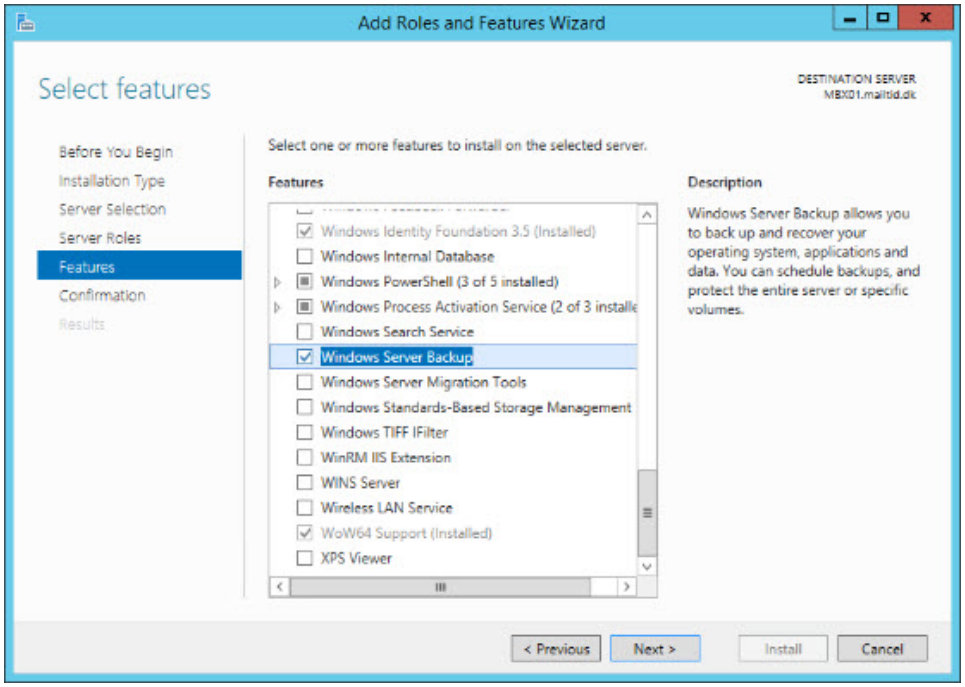
- **System Backup**
  - **Backup**
  - **Source**
  - **Target - HDD**
  - **Target - Network**
    - **UNC**
  - **Settings**
  - **Before/After**
  - **Image Catalog**
  - **Image Explorer**
  - **Windows Server**
  - **System Restore**

1.1.11.10. Windows Server

Z-DBackup needs the *Block Level Backup Engine* module to perform a system image backup. This module is part of Windows 11, 10, 8, 7 and Vista but doesn't come preinstalled on Windows Server operating system. This is how you can install the needed module on Windows Server:

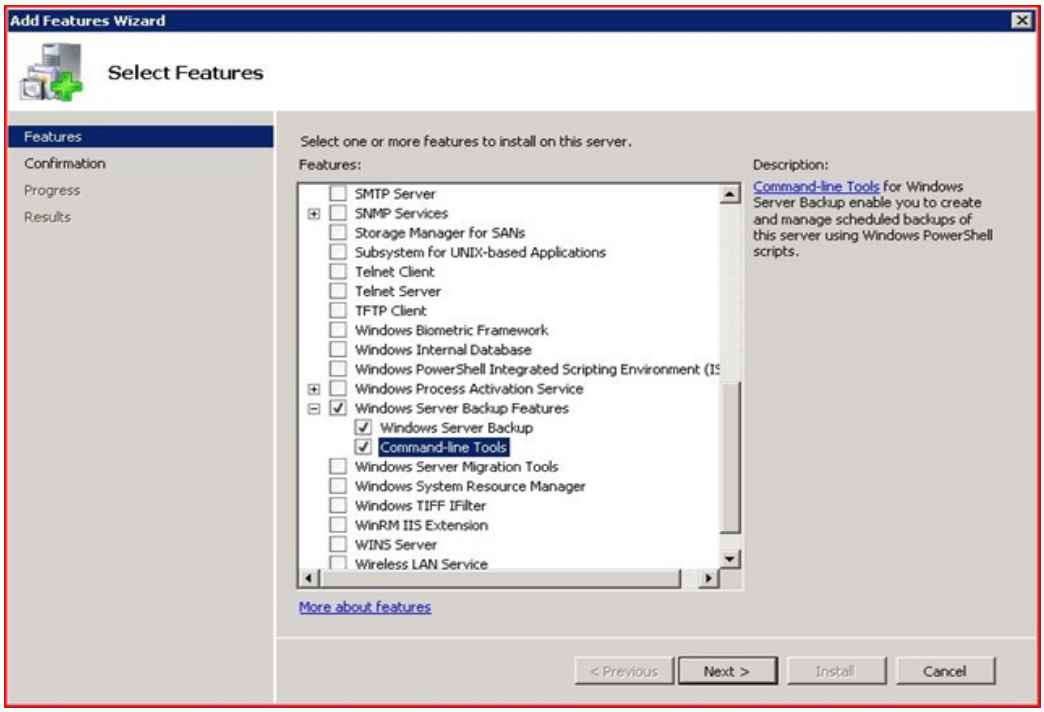
Windows Server 2012(R2) - 2022

Open the "Add Roles and Features Wizard" and activate the tool *Windows Server Backup*.



Windows Server 2008(R2)

Open the "Add Features Wizard" and activate the module *Windows Server Backup*.



Creating a system repair medium - Windows Server

Windows Server operating systems don't have a tool build in to create a system repair disc, but you can acces the recovery and troubleshooting tools from the Windows installation disc or restart your computer, press F8 and select the option 'Repair Computer'.

Windows System Backup

- System Backup
  - Backup
  - Source
  - Target - HDD
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - System Restore

1.1.11.11. System Restore

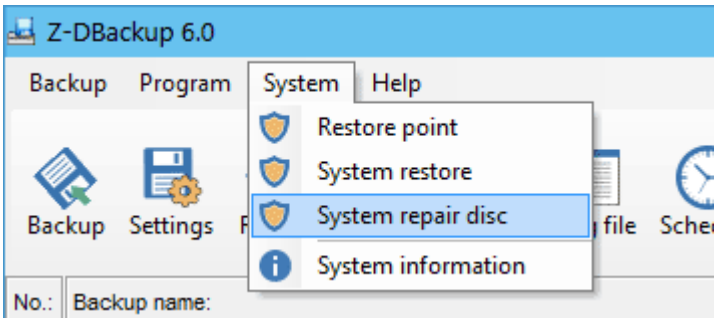
To restore a whole drive including your Windows installation you have to start your PC from a Windows installation disc or a system repair disc. You will then be able to select an image of the drive you want to restore. This image has to be located on a different hard drive than the one containing the drive you want to restore.

⚠ To recover a 32-bit version of Windows you need a 32-bit system repair medium and to recover a 64-bit version of Windows you need a 64-bit system repair medium.

Creating a system repair medium - Windows Workstation

Windows 11, 10, 8, 7 and Vista, lets you create a system repair disc that can be used for various things like repairing the bootloader or recovering Windows from a system image. You can start the program to create a system repair disc from within Z-DBackup. (The *Quick Menu* can be enabled in the program settings under the tab *setup*)

See also: System Repair Disc



Creating a system repair medium - Windows Server

Windows Server operating systems don't have a tool build in to create a system repair disc, but you can acces the recovery and troubleshooting tools from the Windows installation disc or restart your computer, press F8 and select the option 'Repair Computer'.

System Image Recovery

0. Boot your computer from a system repair disc or a Windows installation disc. You might have to change the boot order in the BIOS to boot from a CD or USB stick. For Windows Vista and Windows 7 all USB mediums used for recovery have to be connected to **USB 2 ports** because these operating systems don't contain USB 3 drivers naitively.

1. Find and choose the option "System Image Recovery" in the menu. The menu looks different on different system repair disc Windows versions.

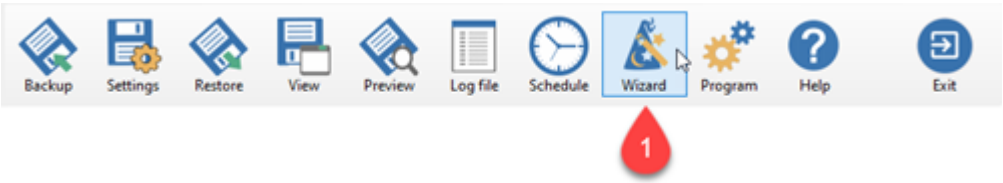
2. Follow the instructions of the system recovery tool.

Windows System Backup

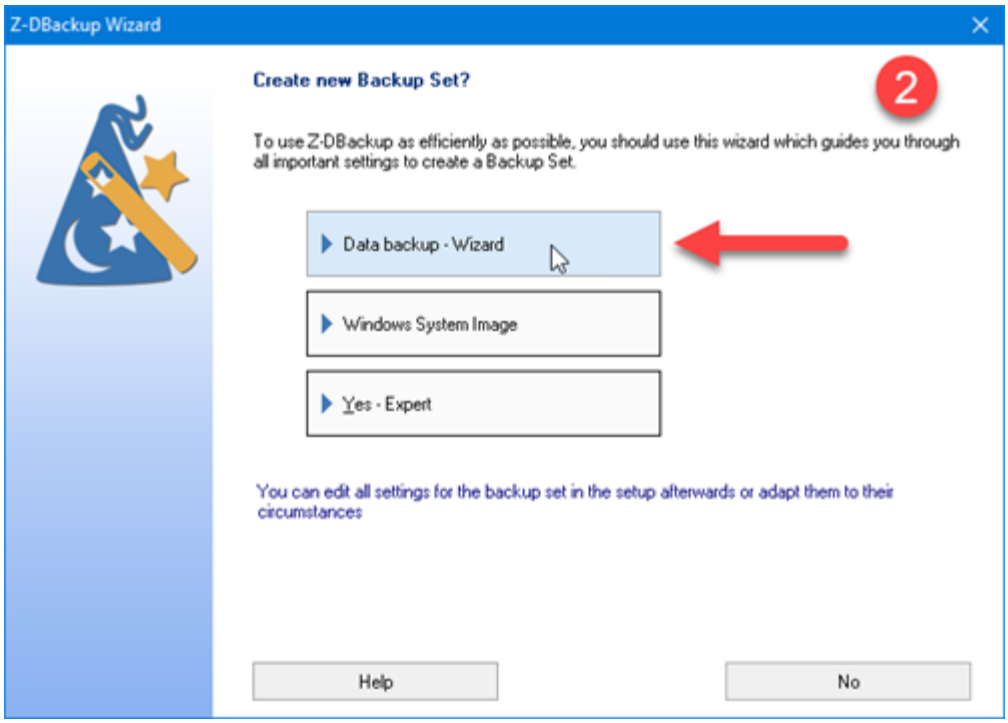
- System Backup
  - Backup
  - Source
  - Target - HDD
  - Target - Network
    - UNC
  - Settings
  - Before/After
  - Image Catalog
  - Image Explorer
  - RDX
  - Windows Server

1.1.12. Backup Wizard

Z-DBackup offers the professional user numerous options and settings for backing up data on the computer or in the network. We have created a wizard that guides you through all important settings and the backup job creation, so that you can use Z-DBackup as efficiently as possible.



Experienced users and users with complex or large backup tasks can also edit all backup settings later in the program settings!



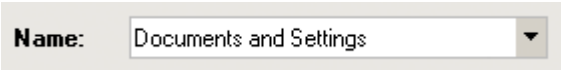
Context-sensitive help

Within the Z-DBackup wizard you have access to the context-sensitive help feature. If you need help with a setting or a dialog window, just press the F1 key and the help text is shown in a new window. Z-DBackup uses the Microsoft HTML-based help system.

1.1.12.1. Backup Name

Backup name

Here you can enter a (meaningful!) description of the backup set or you can select a predefined template from the drop-down list. If you select "Backup Outlook Professional", for example, the wizard will automatically detect the directories of Outlook and select them for the backup.



You can choose from the following predefined backup sets:

Feature	Description
My Files	The most important subfolders of the current users main folder and some public folders are saved. Those include Documents, Music, Video, Pictures, Contacts, Favorites and the Desktop.
Documents and Settings	The Documents folder of the current user and the public Documents folder are saved.
Music and Video	Music and video directories are saved.
Backup Outlook Professional	The Outlook directories and registry entries are saved.
Windows Mail	The Windows Mail directories and registry entries are saved.
Apple iTunes	The iTunes directories are saved.
Windows Live Mail	The Windows Live Mail directories and registry entries are saved.
Windows Thunderbird Mail	The Thunderbird Mail directories are saved.
Google Chrome	The Google Chrome user data folder is saved.
Addison DB	The Addison Data Base ist backed up. The data base service will be stopped before the backup and resta automatically.
System Partition	The whole system partition (usually C:\) is backed up. If you want to be able to restore the operating syste use programs which can create disk images.

You can see which specific folder got selected for the backup in the next step (after hitting next >). You also have the possibility to change them there.

Backup medium

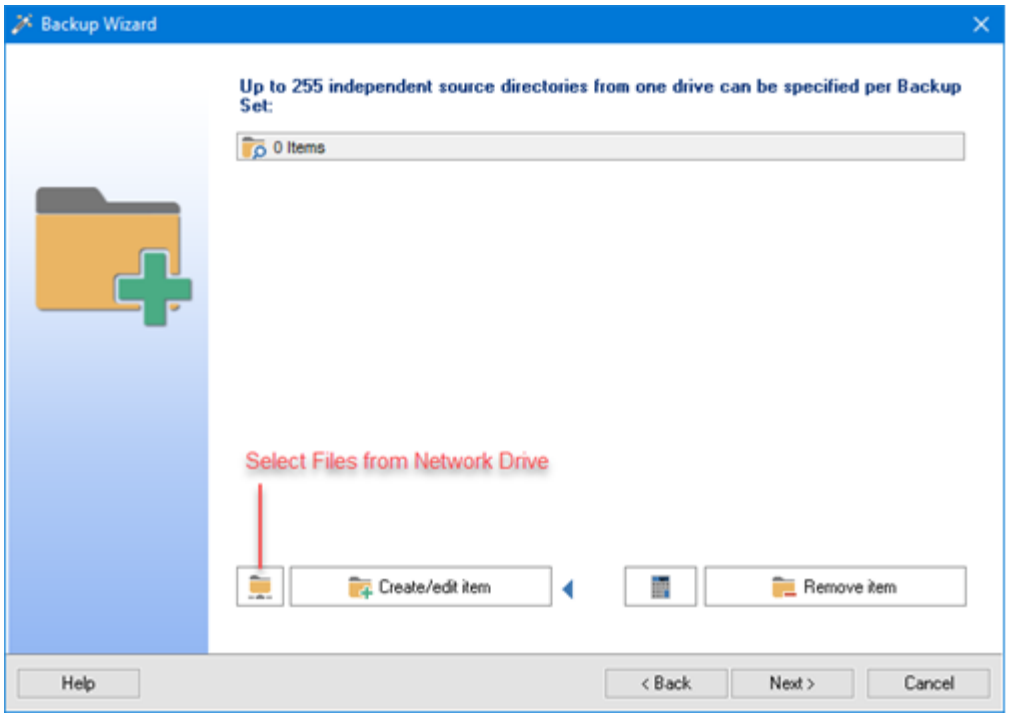
TThis setting allows you to specify which backup medium is used with this backup set. Z-DBackup is preconfigured for

15 different backup media. The media that are currently available on your computer are displayed in the selection.

The backup medium can be a removable disk, network drive or a connected hard drive. The backup can optionally (automatically) be copied or moved from there to tape, DVD-RW or Blu-ray.

1.1.12.2. Backup Source

All files and directories that you have selected for automatical backup are shown in the file list. You can add files or directories with drag & drop. For each Backup Set, only files and directories from one volume can be included, but multiple Backup Sets can be linked to form a backup job list. Create one Backup Set per volumne first and then link those Backup Sets to form a chain.



Alternatively you can use the buttons "Create item" and "Remove item" to add or remove data to or from the list. You can also use the DEL key on your keyboard to remove items from the list.

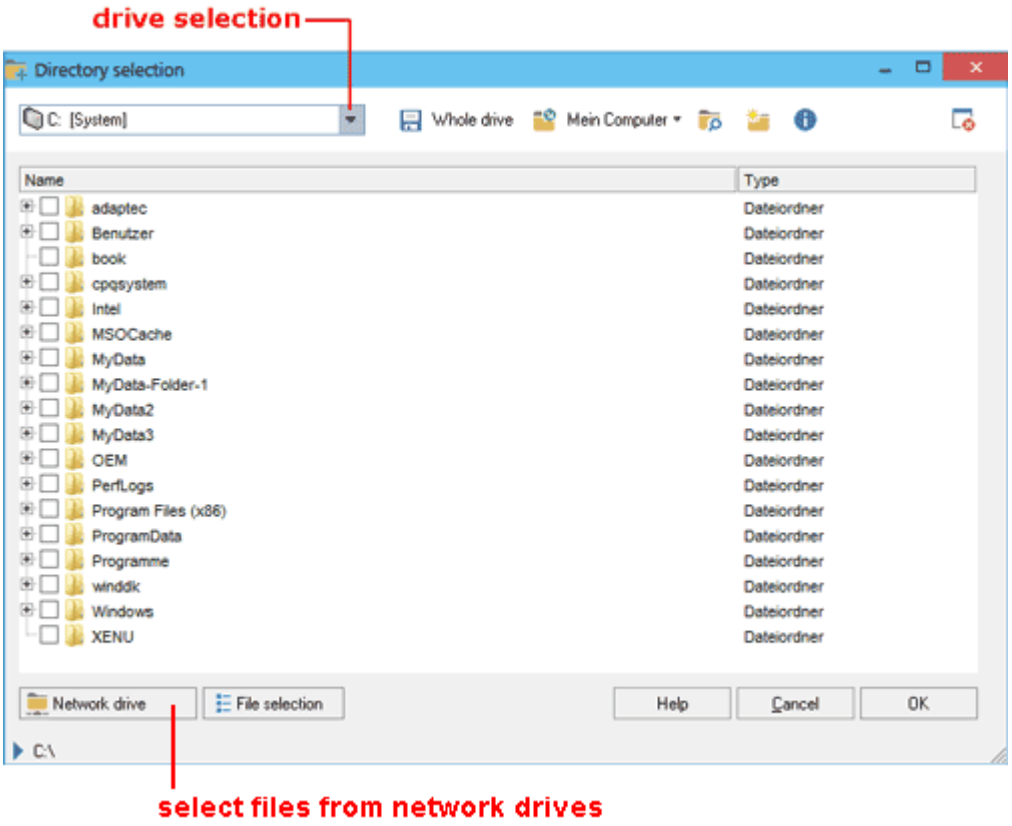
Calculator
This button calculates the total size of the selected directories.

Select items
To choose a single back-up item, just click on it. To choose a region of files, select the first item of your choice first. Then, press and hold the SHIFT key and select the last item of your desired selection

Multiple non-adjacent files: Select the first item of your choice in the file list. Then, press and hold the CTRL key and select the other desired files.

Right click
Opens the dialog "properties and edit".

Create file list
To easily create a file list, use the "Create item" button. A dialog is then shown in which you can select the data you want to backup and add it to your selection".



You can include up to 255 directories (64 in the freeware version) in each backup set. This should be completely sufficient, because directories can also be saved recursively (with subdirectories).
e.g. "C:\Program Files*" counts as one directory, no matter how many subfolders it contains.

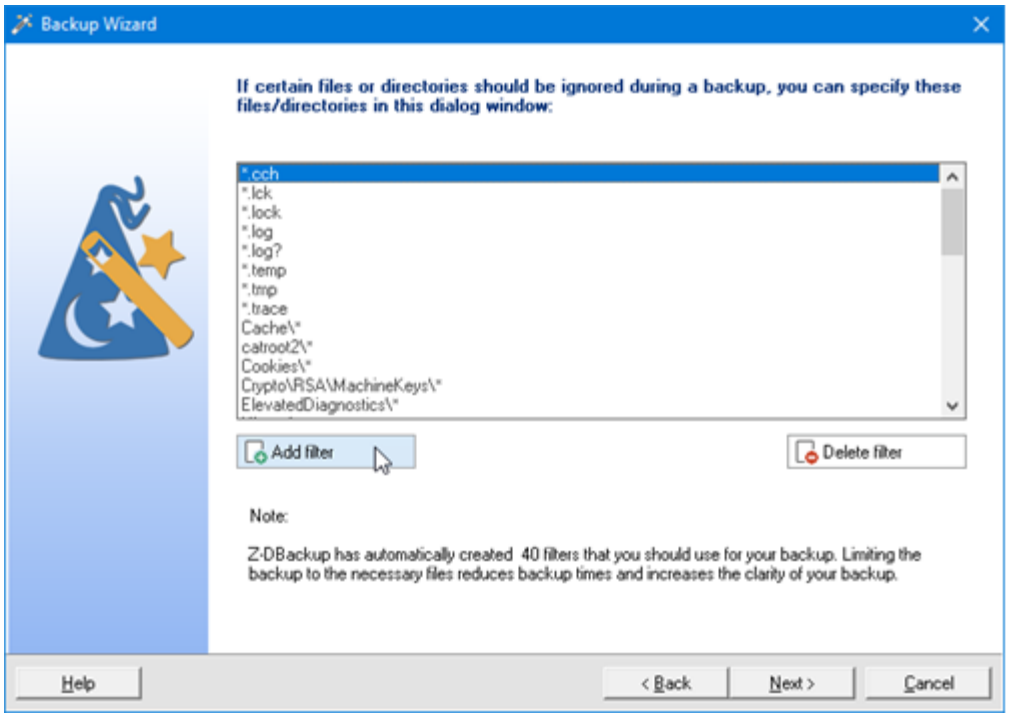
Only the files of one volume can be selected per Backup Set.
If you want to save directories from different volumes in one step, you must create one backup set for each volume and then link them to form a backup job chain.

You can backup your whole hard drive with Z-DBackup (i.e. entry "C:*"), but you could not restore your operating system from such a backup. To create an image of a whole hard drive use the Windows Image Backup feature of Z-DBackup.

1.1.12.3. Backup Filter

Filters are used to refine your file selection. For example, you can create a filter to skip all files whose names comply to a certain pattern.

Let's say you want to backup a directory and all its subdirectories, but want to exclude all files with the extension ".tmp" from your backup. You could of course manually remove all ".tmp" files in the source path dialog window to achieve this, but this method is cumbersome and unreliable, because ".tmp" files that were newly created since the last backup would still be included in the next backup.



Delete filter
You can delete a created filter by selecting the filters from the list and clicking on the Delete filter button underneath the filter list.

Add filter
Usually all files from a directory are saved. If you want to restrict the file selection, you can create a file name mask with this button. You can use the well-known DOS wildcards **?** und *****. You can also specify complete file names (without path).

Popup menu

A right click on the filter list opens a popup menu whose option are described in the following:

Option: **Edit**

Edit filter.

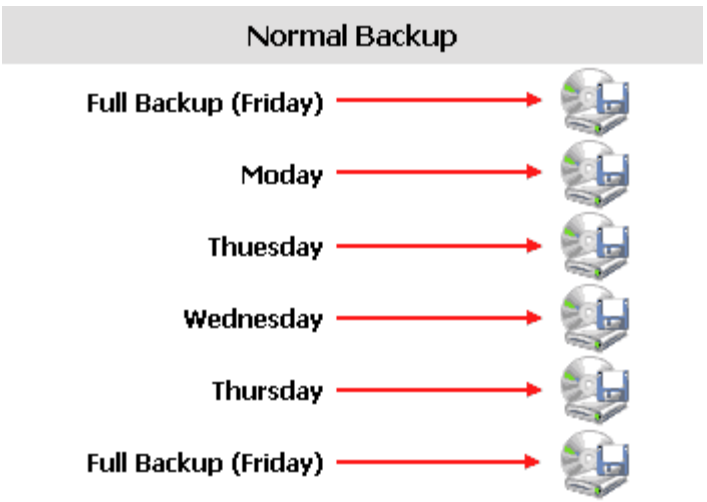
Option: **Remove**

Delete filter.

1.1.12.4. Backup Methods

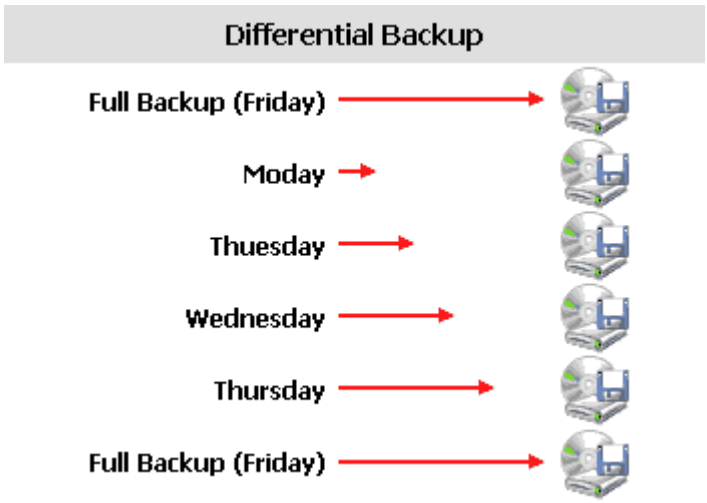
A normal full backup

With a copy backup all selected directories are saved without marking the files as such (the archive attribute remains unchanged). A possibly existing backup file ist deleted prior to backup. With this backup method, you only need the most recent complete backup to be able to restore all files.



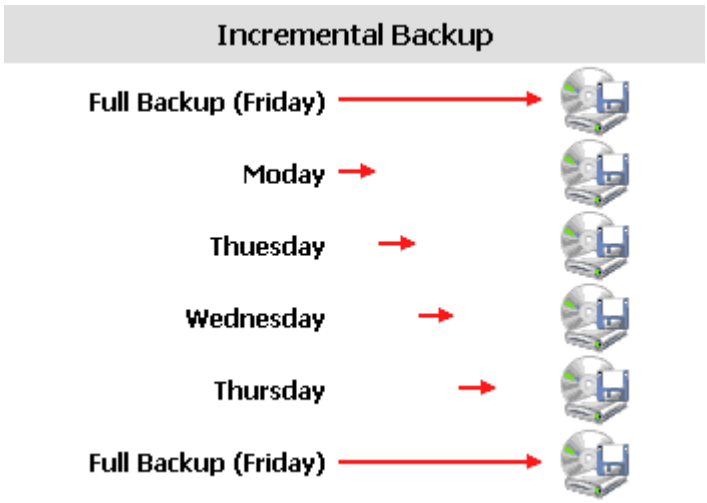
Differential backup

With differential backups, the first backup is a complete backup. After that, at each differential backup, only the files that have changed since the last complete backup are saved.

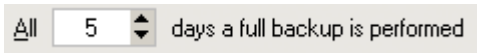


Incremental backup

The first backup with incremental backups is a full backup as well. After that, the files that were changed since the last incremental backup are saved at each backup.



New complete backup all XX days



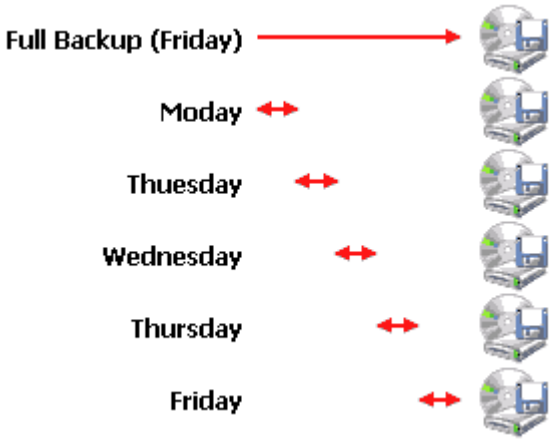
When this option is activated, Z-DBackup automatically switches its backup method according to the specified interval between full backups and differential / incremental backups. After 1 to 99 days of saving only new or changed files, it will create another full backup.

⚠ To create a new full backup with a backup set for differential or incremental backups, you can also create a desktop shortcut with the "full backup" parameter or create another job in the Z-Cron scheduler!

Data synchronization

If this option is activated, only files which are new or newer than those in the backup directory are saved. Reference

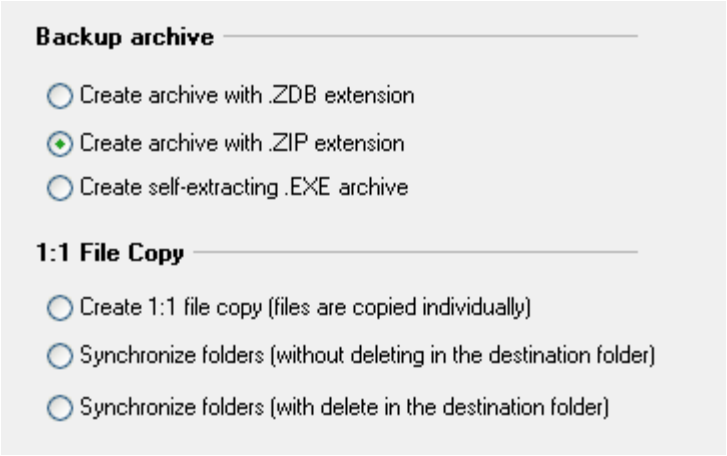
point is an existing backup file. If no backup file exists, the original file ist copied.



1.1.12.5. Backup Format

Create ZIP or ZDB backup archive

The archives are not created in unknown, cryptic formats. The Z-DBackup archive format is compatible to recent version of the standard ZIP format. Thus, a direct, quick and reliable access to the backup files (even without Z-DBackup) is ensured. The default setting is the creation of the backup file in the ZIP format.



Create ZIP archive
The backup file is created in the standard ZIP format. This option is useful if you want to use the backup file on another computer or simply transport your data.

Create ZDB archive
The backup file is created in the standard ZIP format with the extension **.ZDB**. Windows uses extensions to recognize file types. Windows knows, for example, that *D01BACK.ZDB* is a Z-DBackup archive, because the extension .ZDB was registered by Z-DBackup during installation.

Create self-extracting EXE archive
If this option is selected, the backup file is created as a self-extracting EXE archive instead of a ZIP file. Due to limitations in the SFX technology (PKZIP 2.04g), the maximum archive size is limited to 2048 MB (2 GB).

Create 1:1 file copy
Create 1:1 file copies of drives or directories.

Synchronize directories, delete removed files
Like synchronize, but also deletes files which are no longer present in the source from the target directory. Therefore, it creates an exact copy of the data from the source directory in the target directory. Only newer files and files that do not exist in the target directory are copied from the source directory to the target directory.

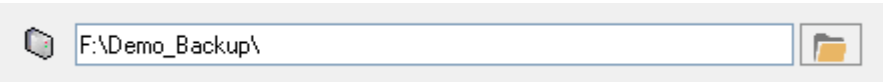
Synchronize directories
This feature can be used to synchronize directory contents between notebooks and personal computers, within home or company networks or even for backup purposes to external hard drives or other volumes. Files which are no longer present in the source are not deleted in the target.

⚠ Files and directories in the target directory are automatically deleted if they no longer exist in the source directory.

⚠ Only one directory can be selected for synchronization.

1.1.12.6. Backup Target

Target location
Select the target drive and directory using the button. After you have selected the target directory, the path is shown in the text field.

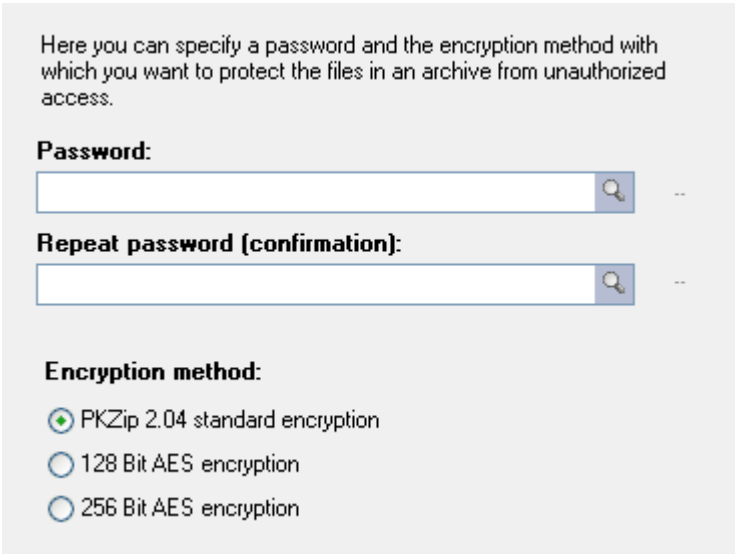


The backup target can be a removable medium, a network drive or a local hard disk. From there, the backup can optionally and automatically be copied or moved to tape, CD-R/RW or DVD+/- R/RW. Do not use the root folder of the medium, but create a new folder for each backup.

Security (only for backup archives)

The encryption feature of Z-DBackup offers the possibility to protect your archives from access by unauthorized persons. Z-DBackup lets you specify a password which is used to encrypt the data in your backup archives. The Professional Version of Z-DBackup offers two encryption methods for backup files which can be selected with the radio buttons.

Enter a password if your backup files should be encrypted with a password. If a backup file is encrypted, only the table of contents can be viewed, but the files themselves can neither be displayed nor restored.



This button shows the stored password as normal text. If this button is not displayed, the option "Hide button to display passwords" was activated in the program settings.

The password can be up to 32 characters long and can contain these characters: **0-9**, **a-z**, **A-Z** and the symbols **!%/&()?.-;+:@*<>#**. Please note that passwords are case-sensitive, i.e. uppercase letters are different from lowercase letters. Generally, longer passwords (passwords with 8 or more characters) are more secure than short passwords, and passwords that contain letters and numbers are more secure than those that contain only letters.

Write down your password and keep it safe! Without the password, you cannot access the password-protected backup archive and you cannot restore the data!

Copy backup to tape, CD-R/RW or DVD
A CD-R/RW cannot simply be written like a hard disk. The creation of a backup archives (i.e. a ZIP file) requires random access to the medium. But a CD/DVD/Blu-Ray disk must be written in one piece, the process must not be interrupted. It is not possible to jump back to another spot and add something there. For that reason, Z-DBackup first creates the backup archive in a target directory and then copies the archive to CD/DVD/Blu-Ray or to tape!

Copy the backup file to tape. This option is available if the add-on module Z-TapeBackup is installed.

Burn the backup file to CD/DVD/Blu-Ray. This option is available if the add-on module Z-DataBurn is installed.

Copy the backup file to an FTP server. This option is available if the add-on module Z-FTPcopy is installed.

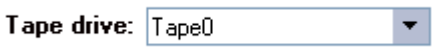
If a removable medium is the target for a backup, these options are not available!

1.1.12.7. Backup Target Tape

Backup Settings for Tape Backup

Tape drive

If several tape drives are installed in the computer, you can select the tape here on which the tape backup is to take place. Regardless of the hardware installed, the tape drives are numbered Tape0 through Tape4. The sequences correspond to the sequence when installing the tape drives.



The backup is by default written to the tape as a 1:1 file copy backup.

Settings for the Tape Drive

Hardware compression
Use the hardware compression feature of the tape drive, if available.

Eject tape after backup
Automatically eject the tape after the backup. If you use a tape loader/tape library, you should deactivate this option.

Prepare tape automatically
Automatically format and prepare unformatted mediums before the backup.

Overwrite tape
If this option is set, the tape contents are overwritte by the backup. If this option is not set, the new backup is appended to existing data on the tape.

Z-DBackup needs the add-on module Z-VSScopy to back up locked or currently used files!

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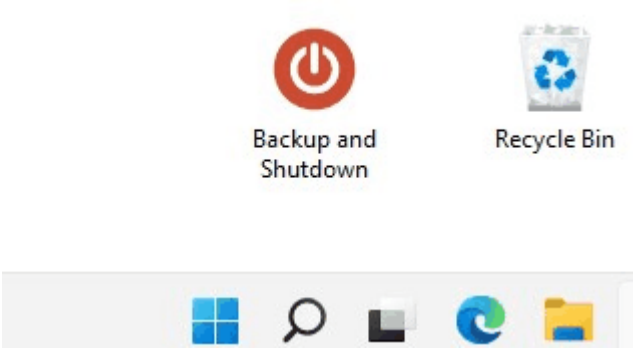
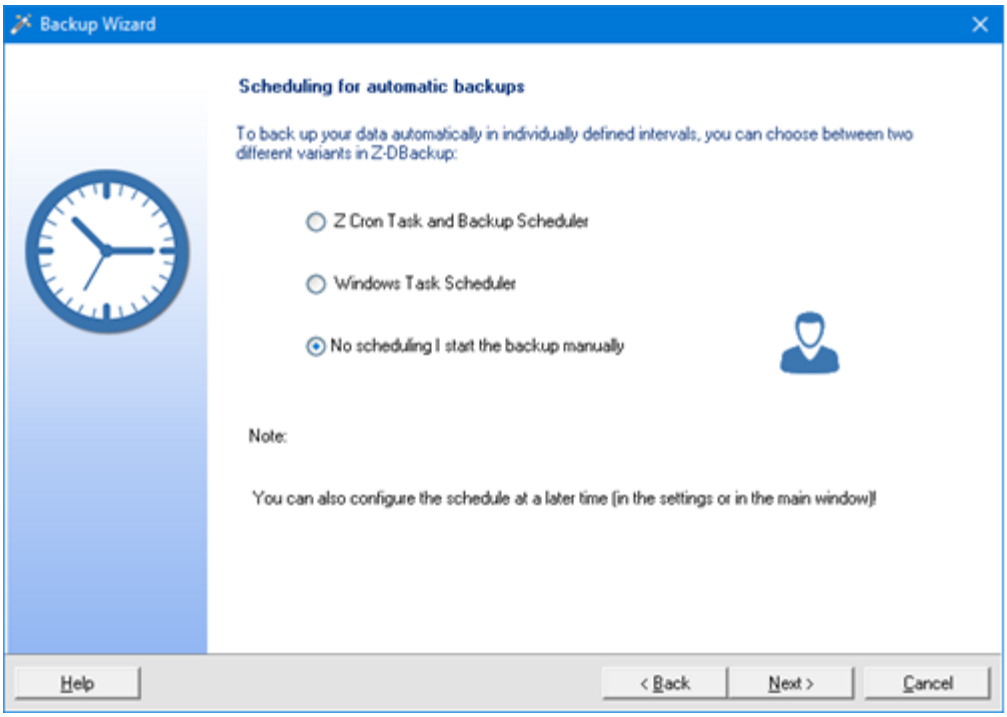
1.1.12.8. Desktop Shortcut

The 1-click backup feature allows for an automatic backup even on workstations that are used irregularly or for which no exact schedule can be created. Z-DBackup creates a custom shortcut directly on your desktop – that means backup and shutdown with one click!



1.1.12.9. Scheduling

With a scheduler, Z-DBackup can be automatically run at predefined points in time (e.g. daily, weekly,) and automatically backup data. Z-DBackup itself does not contain a built-in scheduler for scheduled backups. This is not a disadvantage, but offers many advantages for professional users!



Z-Cron Task and Backup Scheduler

The Z-Cron scheduler was developed specifically for use with Z-DBackup. Z-Cron is a central coordination point for the automation of software. In addition to the scheduled launch of Z-DBackup or other applications, the program contains numerous tools that help to ease automatical system administration. Z-Cron is free for personal use, i.e. it runs on workstations (Windows 7, 8, 10 and 11) without time limitations.

Windows Task Scheduler

Recent versions of Microsoft Windows contain an integrated Task Scheduler. This also makes it possible to run any program at defined points in time.

No scheduling I start the backup manually

For each backup task (backup set) you can choose between Z-Cron and the Windows built-in task scheduler, which allows for a very flexible scheduling that leaves no wishes unfulfilled. The configuration is set up directly after the backup wizard. Special knowledge about the command-line parameters of Z-DBackup are not necessary, Z-DBackup has a built-in interface for both variants.

1.1.12.10. Start Backup

Backup Assistant: Start

The new backup is now set up and you can proceed with the following options

- Create an automatic backup schedule If this option is set, you will then be automatically forwarded to schedule creation in the Windows Task Scheduler. If the Z-Cron module is installed, it is called up for scheduling.
- Exit the wizard and start the backup. The backup set is saved and executed.
- Exit the wizard and back up later. The backup set is saved.

1.1.13. Command-Line Parameters

1.1.13.1. Command-Line Parameters

Via command-line parameters it is possible to call the program with default settings or actions, which allows scheduled backups or backups from batch files. The parameters have to be specified after the program name and must be

separated by spaces.

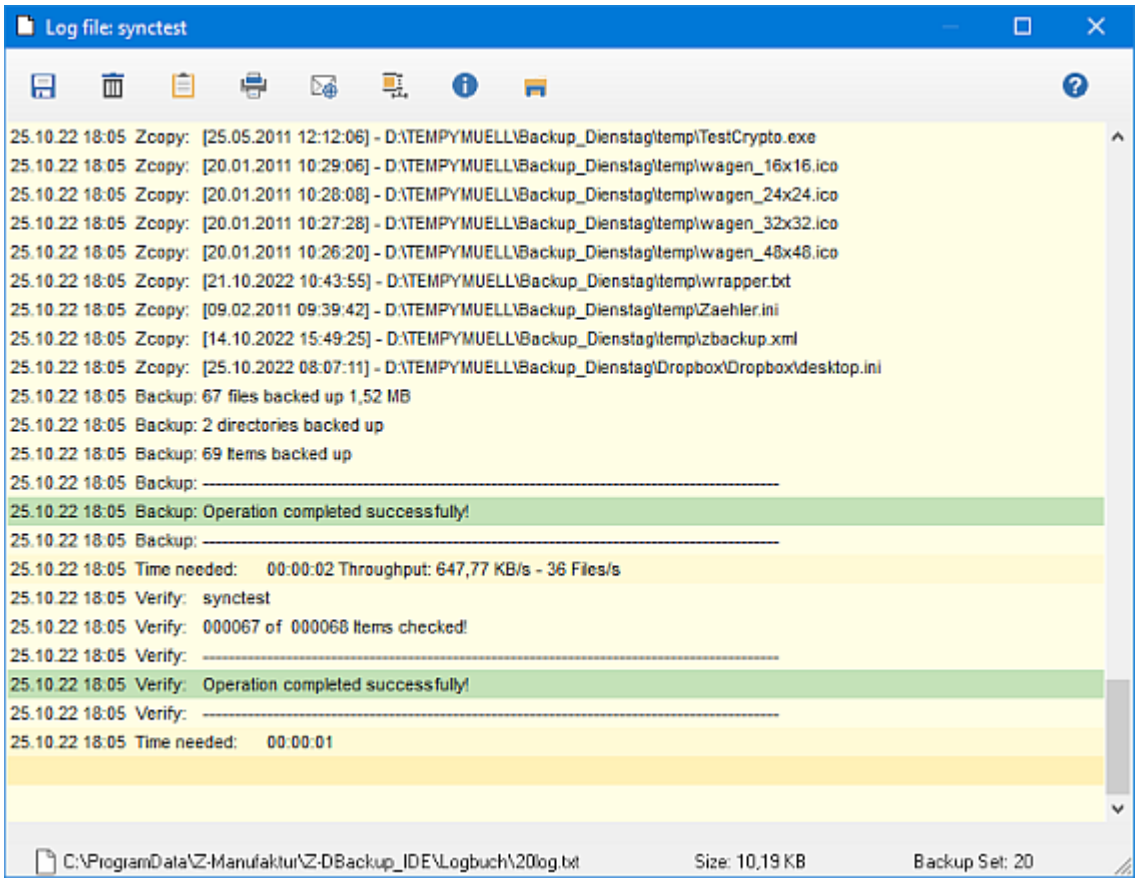
The following parameters are available:

-b *number*	Loads the backup set with the specified number and runs the backup. The program is closed after th is finished. Examples: **C:\Program Files\Z-DBackup\ZDBackup.exe -b 1** (Backup set no. 1 is run automatically) **C:\Program Files\Z-DBackup\ZDBackup.exe -b 5** (Backup set no. 5 is run automatically)
-d *date*	Only files newer than the specified date are saved. The date must be provided in the format *Day.Month.* Example: **C:\Program Files\z-dbackup\ZDBackup.exe -b 1 -d 09.09.2003**
-v	Full backup mode for a differential or incremental backup set. Example if backup set no. 3 is a differentia backup set: **Monday** C:\Program Files\z-dbackup\ZDBackup.exe -b 3 **Tuesday** C:\Program Files\z-dbackup\ZDBackup.exe -b 3 **Wednesday** C:\Program Files\z-dbackup\ZDBackup.exe -b 3 **Thursday** C:\Program Files\z-dbackup\ZDBackup.exe -b 3 **Friday** C:\Program Files\z-dbackup\ZDBackup.exe -b 3 -v
-s	Computer is shut down after backup. Example: **C:\Program Files\z-dbackup\ZDBackup.exe -b 1 -s**
-t	Z-DBackup is started minimized in the system tray. Example: **C:\Program Files\z-dbackup\ZDBackup.exe -b 1 -t**
-m	Allow multiple instances of Z-DBackup. Example: **C:\Program Files\z-dbackup\ZDBackup.exe -b 1 -t -m**
-noclose	Don't automatically close program messages after 30 seconds.
-hibernation	Computer is automatically put into hibernation mode after backup.

In the standard version, calling linked backup sets with command-line parameters is disabled, i.e. only the specified backup set is loaded! ***Also, The parameters -d and -m are available in the professional version only!***

1.1.14. View Log Files

Z-DBackup creates a log file for each backup set to log its backup and restore actions. The files are created in the "Log files" subdirectory in the program directory.



The log files enable you to monitor the success of scheduled backups (with the Windows Task Scheduler of Z-Cron).

If the protocol file grows larger that a certain threshold value (default setting is 64 KB – approx. 20 backups), it is automatically deleted prior to the next backup. This setting can be changed in the program settings.

Function keys

F1 Opens this manual.

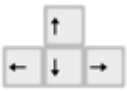
F5 F5 centers and refreshes the current windows. This is often usefull when working via a remote desktop connection.

Page Up Scrolls up one full screen page.

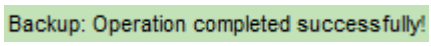
Scrolls down one full screen page.

Scrolls to the first line.

Scrolls to the last line.

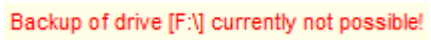

The arrow keys can be used to scroll line by line.

Color scheme



Text with a green background indicate a succefully completed backup.

Text with a red background indicate an aborted backup.



Red text indicate errors that occured during a backup.

Buttons


Save log file


Delete log file


Copy log file to clipboard


Print log file


Sent log file as e-mail


Zip log file


View system log


Open log file folder

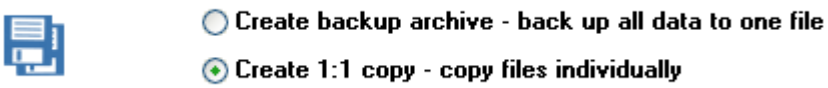

Help

If you access a remote computer with TeamViewer or Remote-Desktop (RDP) that has Z-DBackup installed and want to save a logfile of a backup-set on your local computer, you can do so by copying the logfile to clipboard (button ) on the remote computer and paste it into a text file on your local machine.

 Please regularly check that your backups are working and complete!

1.1.15. 1:1 File Copies

Z-DBackup can either save data to a compressed and possibly encrypted archive file or just create a 1:1 copy of your files in a backup directory. Not only the files, but also any existing NFTS file information and security settings are included in the backup. You can use different options in the Z-DBackup settings depending on the backup format.



The default setting is the backup creation in the ZIP format.

Copy NTFS Permissions

NTFS compatible backup. Extended file information and attributes are included in the backup. Security settings are copied to an NTFS formatted medium and can be restored. Path lenghts of more than 260 characters are supported.

Precondition for inclusion of the security settings in the backup is an NTFS formatted backup medium.

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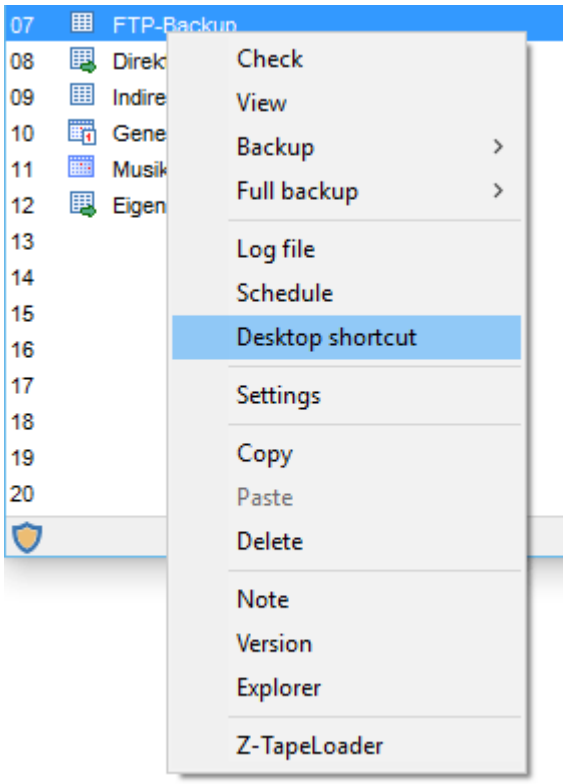
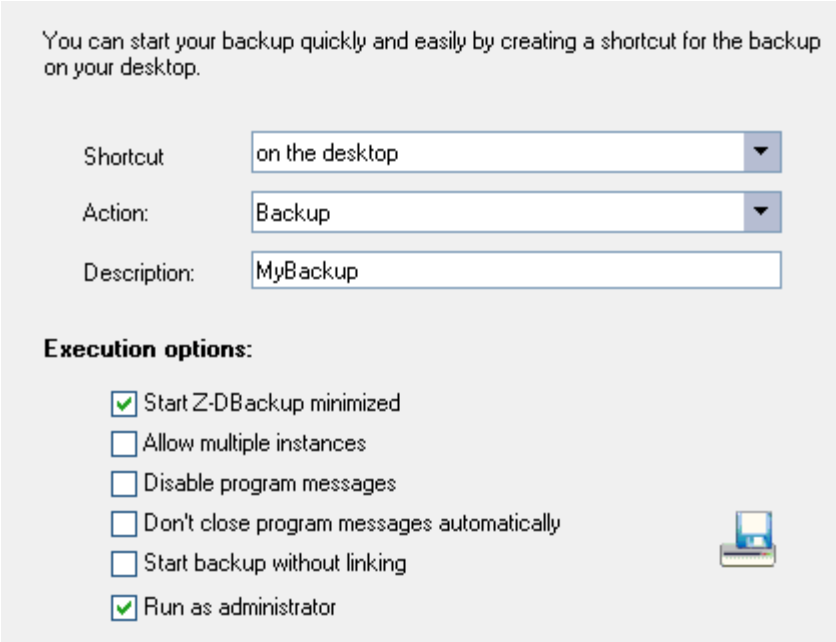
1.1.16. 1-Click Backup

If you want to start your backups manually instead of using our scheduler, you can create desktop shortcuts for your backup sets. After a backup set has been created, right-click it in the list ob backup sets.

Select **Desktop Shortcut** from the context menu.



In the dialog window you can create a shortcut for the selected backup set on your desktop, in the start menu or in the autostart folder.



The selected backup set can be started with the options **Backup**, **Backup and shut down**, **Backup and standby** and **Full Backup for incremental or differential backup sets.**

Backup creates a shortcut for a 1-Click Backup.

Backup and shut down
creates a shortcut for a 1-Click Backup with the added feature that the computer is automatically shut down after backup.

Full Backup for incremental or differential backup sets creates a shortcut for a 1-Click Full Backup even though the backup set is for incremental or differential backups.

Backup and standby
creates a shortcut for a 1-Click Backup with the added feature that the computer is automatically set to standby after backup. Going into standby mode and returning from standby will usually need much less time than shutting a computer on or off. Standby is usually used for notebooks because it helps save energy while the notebook is in battery mode.

1.1.17. Outlook Backup

Outlook Backup

Outlook is a part of the **Microsoft© Office** package. In addition to sending and receiving e-mails, it contains a variety of features for professional users, such as managing contacts, tasks, notes, and dates.

Outlook keeps its data in different, hard to access locations in the whole Windows system. The exact locations and file formats vary depending on the Office and Windows versions used.

Outlook Backup

The backup wizard of Z-DBackup does the tedious and time-consuming work of manually collecting all Windows Mail data for you. You can backup your complete data and settings in a few minutes!

1. Start the Z-DBackup wizard by clicking on the wizard icon in the main window.
2. Select "Backup Outlook" from the list of descriptions.
3. Confirm the message box "Do you want to create an Outlook backup?" with Yes. Z-DBackup creates the file list for the current user and prepares the registry backup.
4. Complete the Z-DBackup wizard form.
5. Close Outlook and start the backup.

Windows Mail Restore
Restoring your data is just as easy and quick as the backup. You can choose to restore all data from a backup to a directory or select files for restoration into the Windows Mail program directories.

NOTE:

- Only the settings of Outlook 2000, XP, 2003, 2007 and 2010 can be saved and restored automatically.
- The data is not synchronized. A restore overwrites data that exists on the system.
- Please write down your login info for e-mail servers, as these cannot be included in a backup.
- You can use the add-on module Z-VSScopy for backing up Outlook while it is running.

1.1.18. Windows Mail

Windows Mail Backup

Windows Mail is the successor of Microsoft's Outlook Express. It contains an e-mail client and newsreader and is included in Windows Vista. In contrast to Outlook Express, Windows Mail is no longer part of Internet Explorer and is therefore not available for Windows versions older than Windows Vista.

Windows Mail stores its data in different, hard to access locations in the whole Windows system.

Windows Mail Backup

The backup wizard of Z-DBackup does the tedious and time-consuming work of manually collecting all Windows Mail data for you. You can backup your complete data and settings in a few minutes!

1. Start the Z-DBackup wizard by clicking on the wizard icon in the main window.
2. Select "Backup Windows Mail" from the list of descriptions.
3. Confirm the message box "Do you want to create a Windows Mail backup?" with Yes. Z-DBackup creates the file list for the current user and prepares the registry backup.
4. Complete the Z-DBackup wizard form.
5. Start the backup.

Windows Mail Restore

Restoring your data is just as easy and quick as the backup. You can choose to restore all data from a backup to a directory or select files for a restore into the Windows Mail program directories.

NOTE:

- The data is not synchronized. A restore overwrites data that exists on the system.
- Please write down your login info for e-mail servers, as these can not be included in a backup.

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1.1.19. Backup to CD/DVD/Blu-Ray

Burn backup to CD-RW, DVD+/-RW, Blue-Ry or M-Disk

CD-RWs or DVD+/-RWs are a good backup medium, they have a reasonable life span and can be rewritten. If you want to use a DVD burner for your backups, you should refrain from using DVD+ or DVD- disks and choose DVD-RAMs! DVD-RAM technology is the only DVD technology that has been conceived for use in professional IT environments right from the start. **The first choice for backups, of course!**

There are generally several possibilities to burn backups with Z-DBackup:

- Direct backup to CD-RW or DVD+/-RW with a UDF burner software
- Direct backup to a UDF-formatted CD-RW, DVD+/-RW or DVD-RAM

- Direct backup to DVD-RAM
- Indirect backup with the add-on module Z-DataBurn
- Indirect backup by using another external burning program.

Direct Backup to CD-RW or DVD+/-RW

Usually, a CD/DVD/Blu-Ray must be recorded completely in one go. To remove this problem, UDF ("Universal Disk Format") was invented. Here, blocks of 2 or 8 KB are written to the CD/DVD/Blu-Ray, which allows to adress a CD-RW or DVD+/-RW just like a hard drive. The UDF burning software (PacketCD, DirectCD, InCD, InstantBurn) runs silently and unnoticed in the background.

In connection with a UDF burner software (PacketCD, DirectCD, InCD, InstantBurn), a direct backup to CD-RW or DVD+/-RW is also possible with Z-DBackup. Z-DBackup automatically recognizes mediums that have been UDF-formatted with PacketCD, DirectCD, InCD or InstantBurn. If that doesn't work on your system, you can select the option Disable CD-ROM check (in the program setup) to disable Z-DBackup's write lock for CD/DVD/Blu-Ray.

The UDF burner programs are not part of Z-DBackup and must be obtained separately!!

Direct backup to DVD-RAM

The advantage of the DVD-RAM over other recordable and rewritable CD blanks is that it was invented especially as an archiving medium. If the medium is handled with care, the data on a DVD-RAM has a durability of at least 30 years. Additionally it can be used almost like a hard drive or floppy disk and no burning software is needed to write to it. The DVD-RAM can be re-recorded up to 100,000 times.

OEM DVD-RAM drives are often missing a suitable DVD-RAM driver, but there are DVD-RAM drivers freely available on the internet.

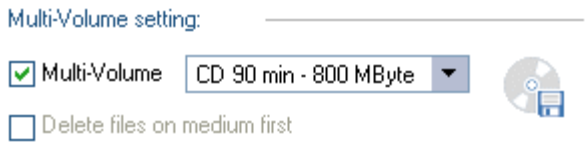
Indirect backup with the add-on module Z-DataBurn

Z-DataBurn makes it possible to automatically burn archives created with Z-DBackup to CD-RW, DVD+/-RW, Blue-Ray or M-Disk right after the backup is complete, i.e. the backup archive is first created on a local or remote hard drive and then then burned to CD/DVD/Blu-Ray. You can choose to have the backup archive created by Z-DBackup automatically deleted after the burning process.

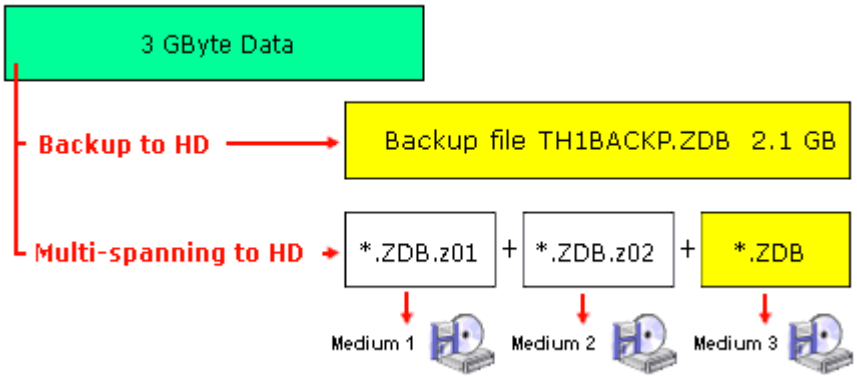
If the backup is first created on a removable drive, the CD/DVD/Blu-Ray lock is disabled!

Multi-Spanning on CD, DVD or Blue-Ray

If the backup archive is too large for a normal CD/DVD/Blu-Ray, the following option can be enabled in the backup settings:



Each partial archive file is burned to CD/DVD/Blu-Ray by Z-DataBurn after it was created on the hard drive.



To open a multi-volume backup archive later, you have to open the file with the extension .ZDB or .ZIP which will usually be found on the last medium of the multi-volume backup.

Backups spanning multiple volumes on CD/DVD/Blu-Ray or tape can only be created with the professional version of Z-DBackup!

1.1.20. Open File Backup

It is a big challenge for every backup software to copy files that are already opened by other applications for exclusive writing access. Open locked files can not be dealt with by *normal* backup programs. This especially affects databases which are in many cases ALWAYS open. The add-on module **Z-VSScopy** enhances the possibilites of Z-DBackup for live backup, e.g. for SQL and EXCHANGE databases.

Z-VSScopy

We introduce the new add-on module Z-VSScopy

This new add-on module allows Z-DBackup to back up open and locked files, just as with Z-OpenLock. The difference: Z-VSScopy uses the Microsoft Volume Shadow Copy Technology (VSS) which is built into Windows.

By using VSS technology, Z-DBackup can copy all open and locked files, databases and running programs. Many programs specifically support VSS so that their files are put into a fully consistent state before they are backed up.

Z-VSScopy is both a module for Z-DBackup and Z-TapeBackup and a standalone freeware program. It displays all existing shadow copies in the system and lets the user view their contents (with an Explorer-like window), delete snapshots or create new ones. If necessary, the user can copy individual files out of the shadow copy to any location on the system.

Supported OS: Windows 11, 10, 8, 7, Vista and Windows Server 2022, 2019, 2016, 2012 (R2), SBS, 2008 (R2)

Z-VSScopy

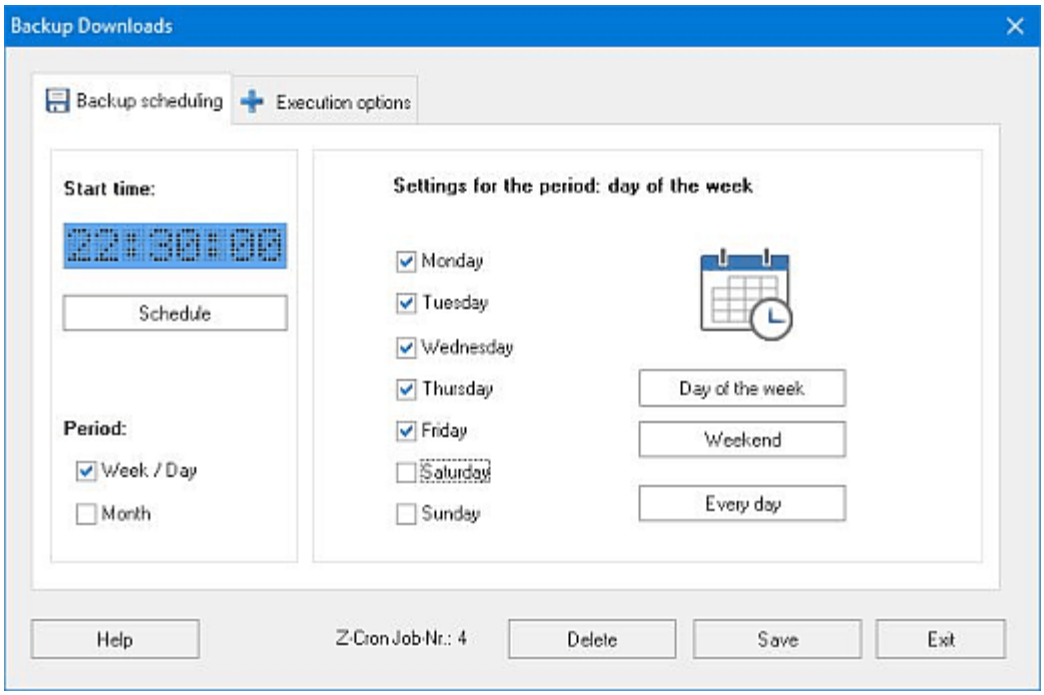
1.1.21. Scheduling - Z-Cron

Z-DBackup does not contain a built-in scheduler. This is not a disadvantage, but offers many advantages for professional users:

- Z-DBackup does not have to be kept in memory at all times, just because there is one backup per day
- A scheduler that is already installed on the system can be used, such as the Windows Task Scheduler
- Z-DBackup can be run without problems via a system service, even with different access rights.

For optimal scheduling, I offer the program Z-Cron. Z-Cron is a central coordination point for the automation of software. In addition to the scheduled launch of Z-DBackup, Z-DataBurn or other applications, the program contains numerous tools that help to ease automatical system administration.

You can create a schedule directly from Z-DBackup



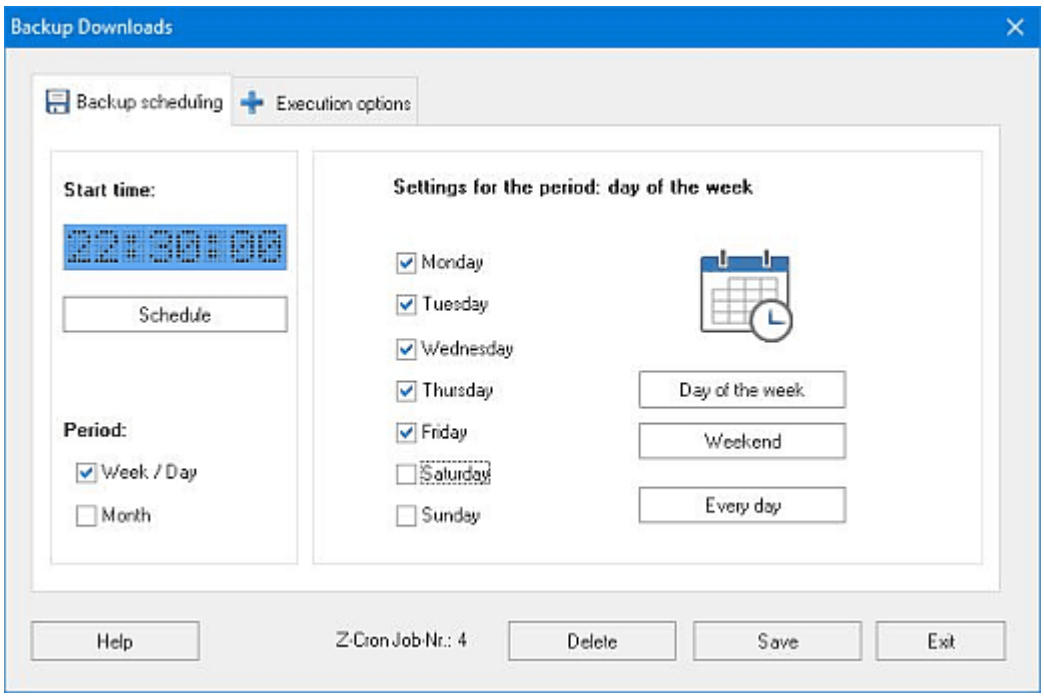
Backup Scheduling

1.1.21.1. Set Starting Time

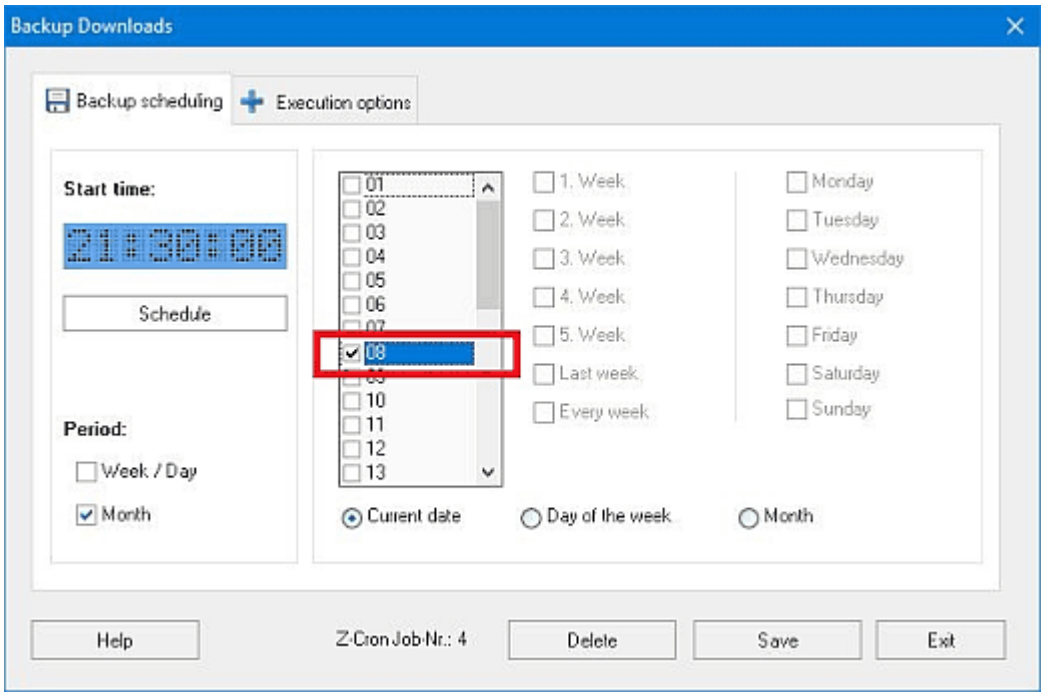
On the first tab you can specify the starting time(s) for the backup.

Here you can choose between two options:

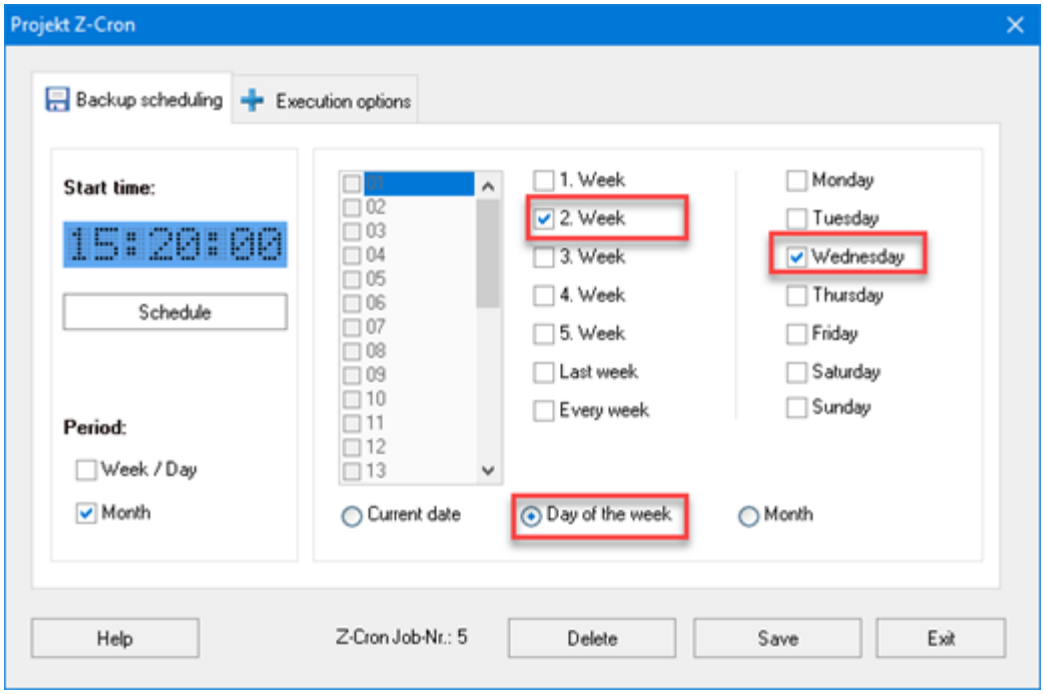
Period: Weekdays



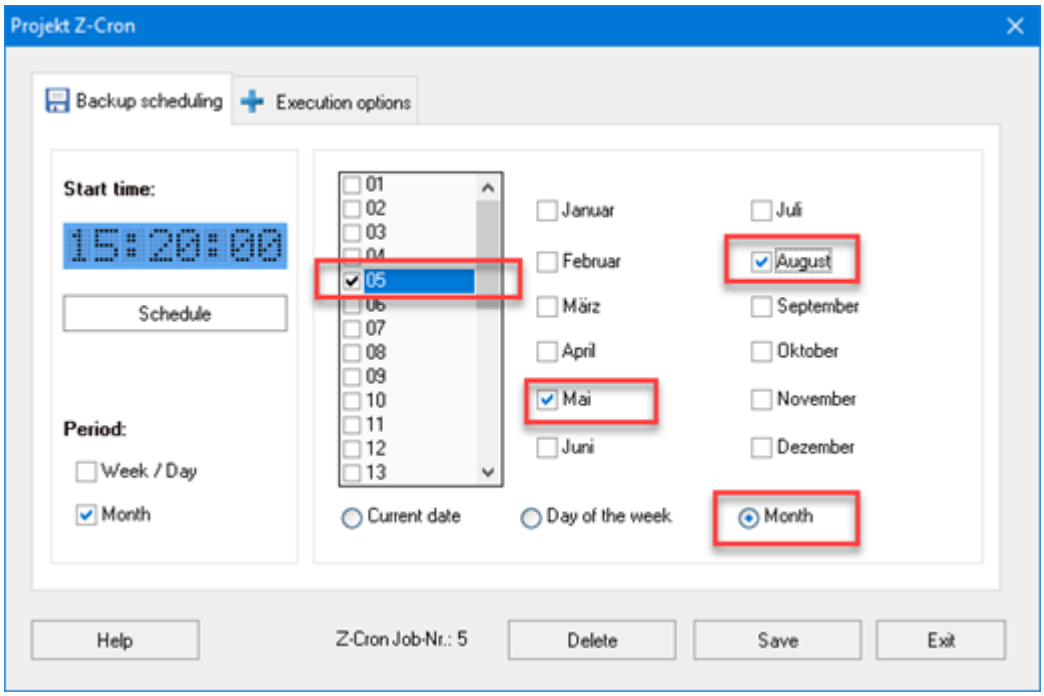
Period: Month / Date



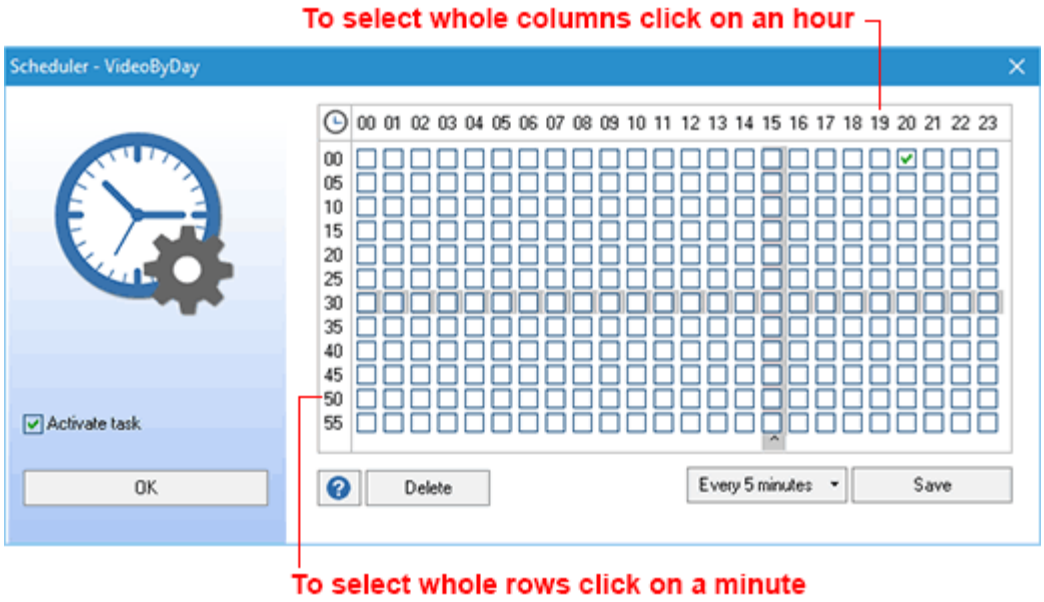
Period: Month / Weekday



Period: Month



Schedule: **Starting time / interval**
Here you can set the starting time or an interval for the selected Z-Cron job. Simply tick the checkbox for the desired time. In the calendar on the right you can verify your settings for the specified interval.

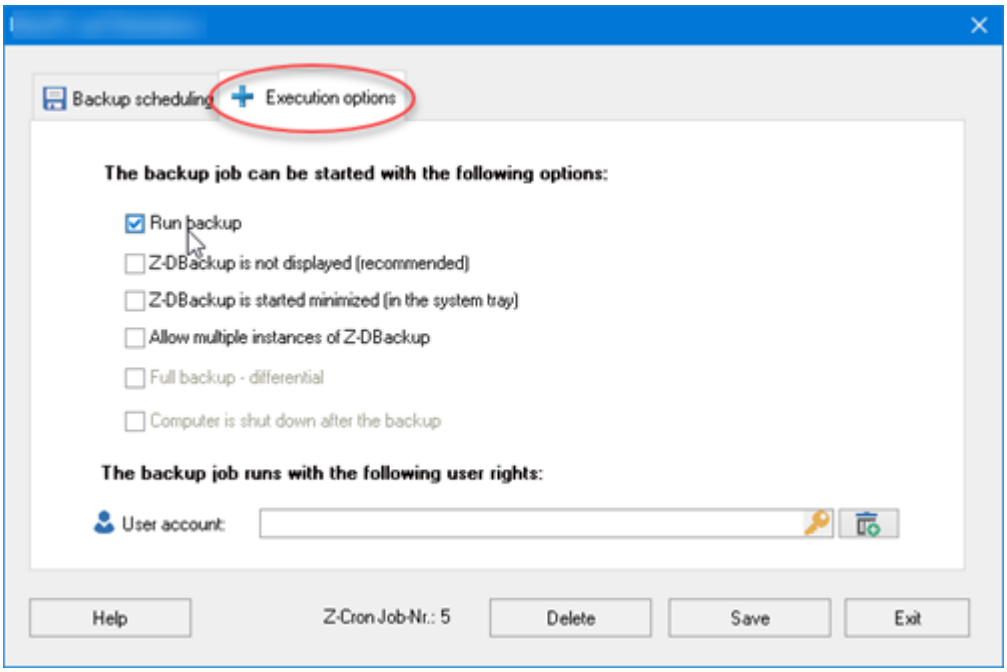


Z-Cron Scheduling

- Scheduling - Z-Cron
  - Optional Parameters
  - User Permissions
  - Add-On Z-Cron

1.1.21.2. Optional Parameters

You can set additional options for Z-Cron on the second tab of this dialog.



You have the choice between the following options:

Run Backup
If this option is deactivated, the scheduled backups will not be run, but the schedule will not be deleted.

Do not show Z-DBackup windows
No Z-DBackup windows are shown. Any communication between the program and the user's desktop is disabled.

Allow multiple instances of Z-DBackup
The default setting is that only one instance of Z-DBackup can be run at a moment.

Full backup
Run a complete backup with an incremental or differential backup set.

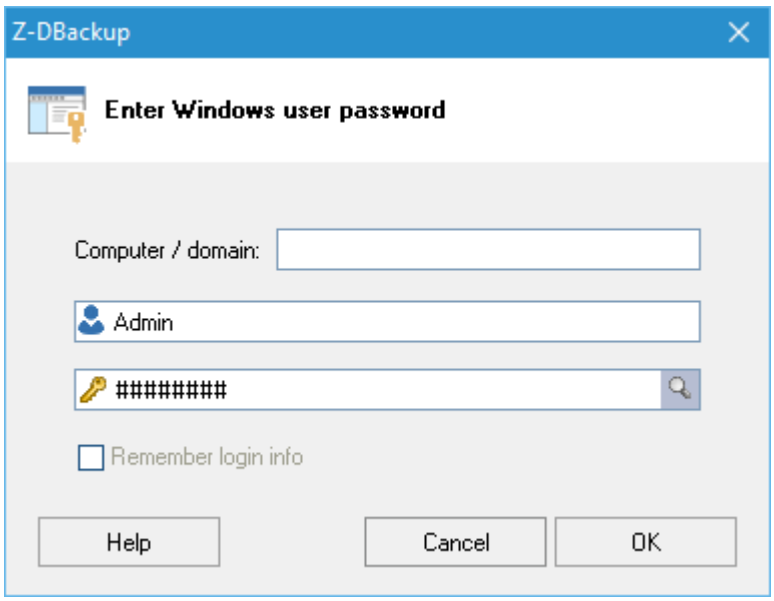
Shut down computer after backup
Automatically shuts down the computer after the backup.

User account
To make sure that Z-DBackup has appropriate access rights (NTFS permissions) to run backups, even if no user is currently logged in at the computer, you need to specify a user account that is used by the scheduler to run Z-DBackup. Enter the user name and password. If your user account does not have a password, enter the user name and password of the administrator account. If you have created a dedicated user account for backups, you should enter its login info here.

Z-Cron Scheduling

1.1.21.3. User Permissions

If Z-Cron is running as a **system service** in the default (hidden) **LocalSystem** user account which has no access rights to network ressources, Pproblems may occur if your backup makes use of such ressources. You can change this by specifying the login information of a user account that you want the backup to run in. Depending on your network configuration, you might need to specify a local admin account, the administrator of the **domain**, or another user with suitable permissions!



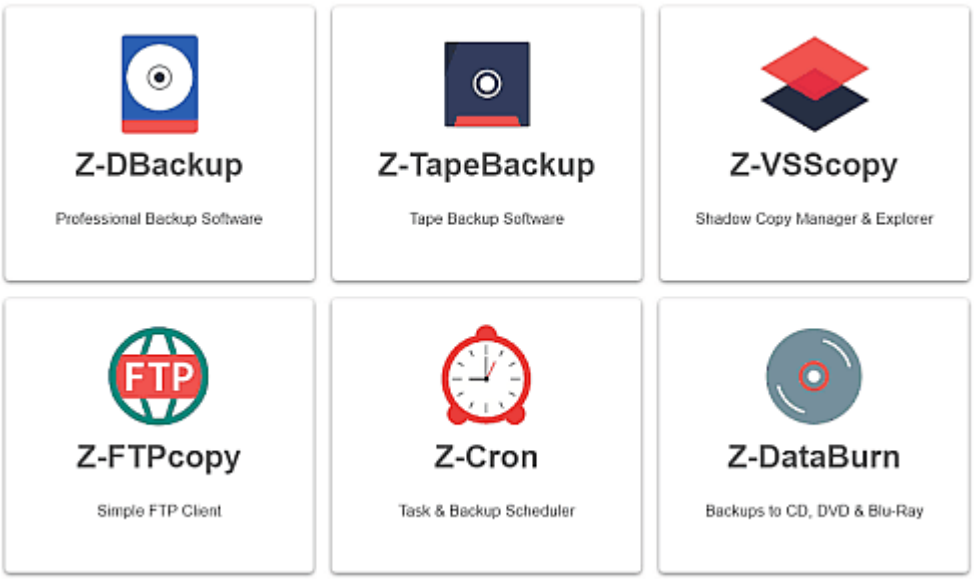
⚠ It is usually not required to enter something into the Computer/Domain field on workstations. In case of doubt, just leave this field empty. You can use Z-Cron to test if the specified data works.

⚠ It is always a good idea to create and use specific service accounts and not an administrator account. This makes changing the admin password later a whole lot easier.

Z-Cron Scheduling

Add-On Modules

The modular design of my programs allows a simple and cost-effective configuration of your backup environment.



Modular Design

The modules Z-DBackup, Z-VSScopy, Z-TapeBackup, Z-TapeLoader, Z-DataBurn, Z-Cron, Z-TaskHelp and Z-FTPcopy are products developed by us. There are also some useful products available from third parties which are fully supported by our modules.

We offer the following :

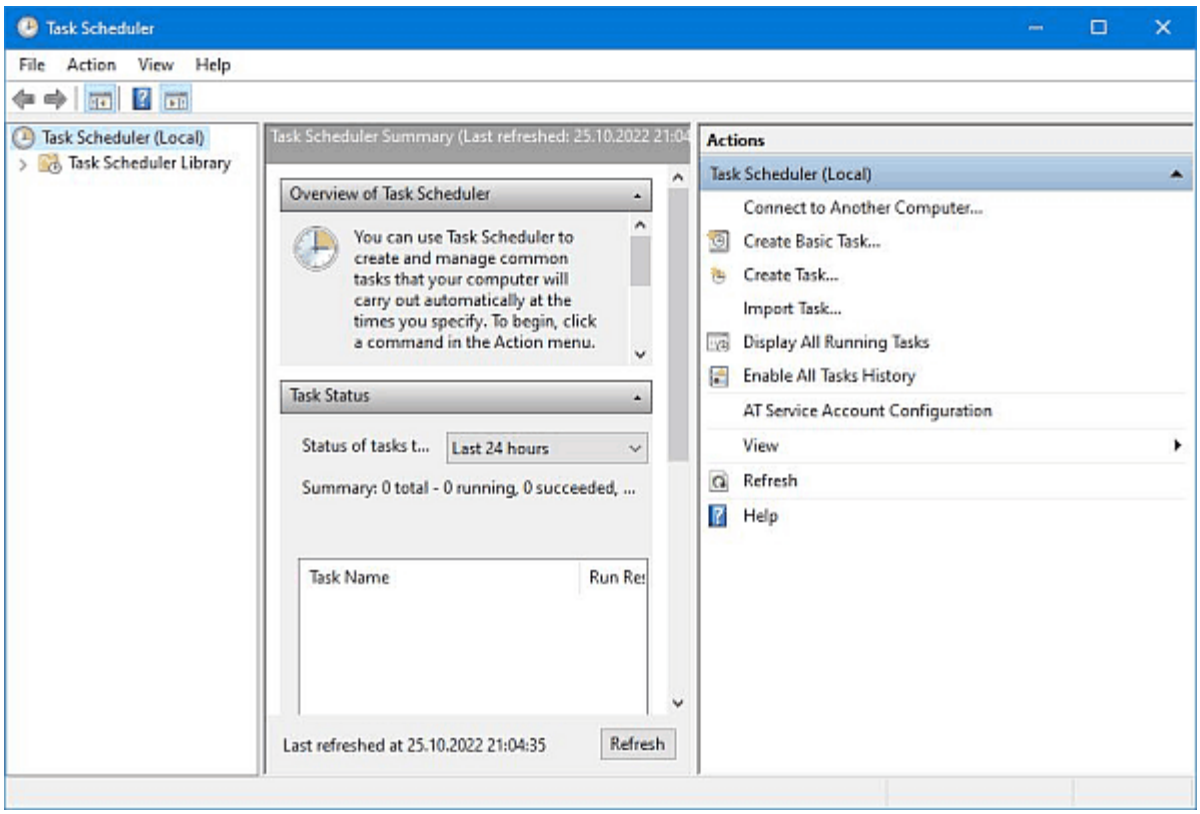
Module	Languages	Function	Website
Z-DBackup		Backup software	z-dbackup.de
Z-Journal		Monitoring the backup processes of Z-DBackup or Z-TapeBackup	z-dbackup.de
Z-VSScopy		Open File Manager for Z-DBackup	z-dbackup.de
Z-DataBurn		Burning to CD/DVD	z-dbackup.de
Z-Cron		Scheduler	z-cron.com
Z-FTPcopy		FTP / FTPS / SFTP transfers	z-cron.com
Z-TapeBackup		Tape backups	z-dbackup.de
Z-TapeLoader		Control for tape libraries	z-dbackup.de

Help Z-DBackup

- Notes on the Program
  - What's new?
  - Programm Update
  - Service and Support
  - Programm Description
    - Features Overview
  - License Terms and Conditions
  - Registration Form
  - Data Protection Declaration

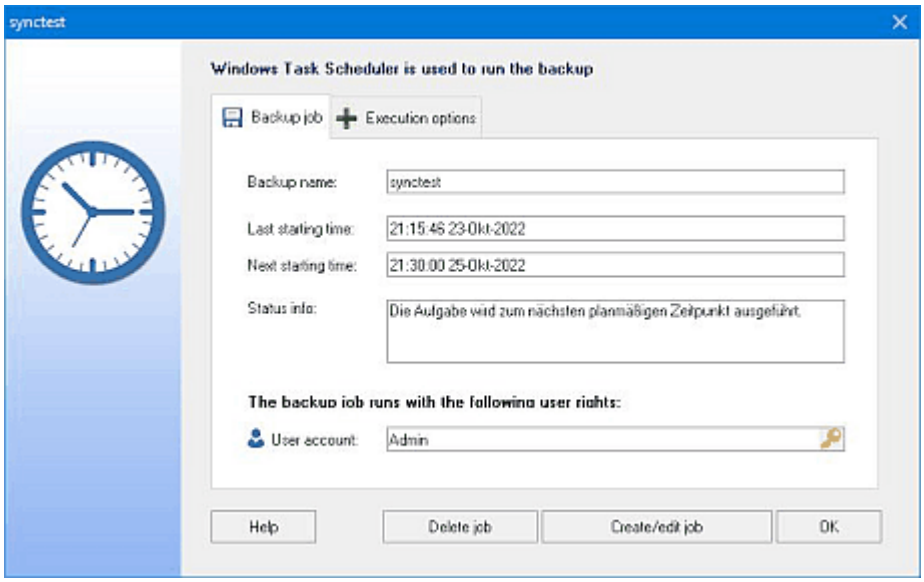
1.1.22. Scheduling - Windows

Microsoft Windows have a built-in task scheduler. For many backup tasks, you might need to be able to start the backup without a user currently logged in at the machine. The work should be done automatically, without any human intervention. For this reason, Windows offers the Task Scheduler service. You can use the control panel to tell this service which applications it should start at what times.



Backup Scheduling

Z-DBackup contains a built-in interface to Microsoft Task Scheduler. If the option *Windows Task Scheduler* was activated in the backup set, you can specify the scheduling settings for a selected backup set with the Schedule button in the main window or in the settings of Z-DBackup. A wizard is then shown which lets you specify some options with which the backup can be started.

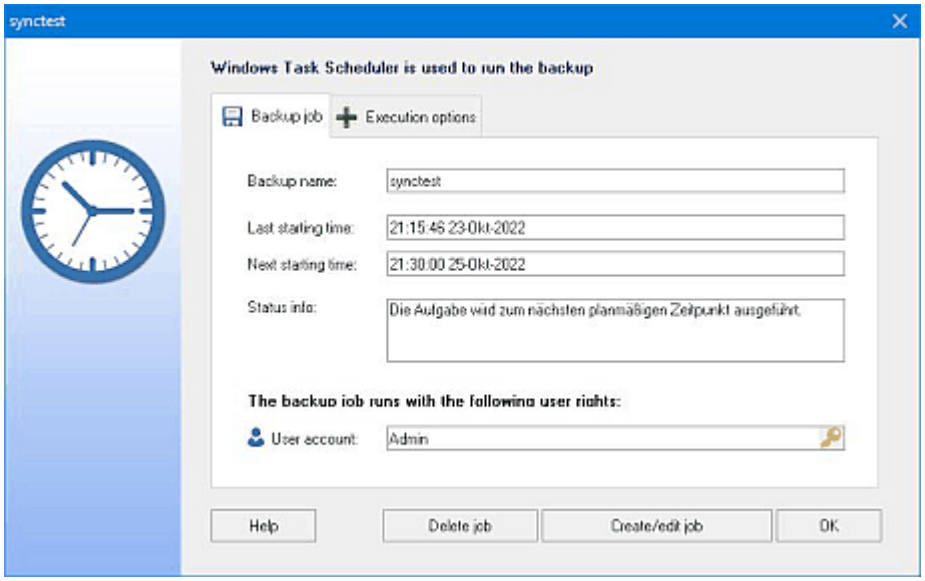


⚠ You can find detailed information about Windows Task Scheduler in the Windows help (call it with Start → Help → tab Index, search term Task Scheduler).

1.1.22.1. Settings

Windows Task Scheduler

Scheduled backups
Z-DBackup contains a built-in interface to Windows Task Scheduler. If the option *Windows Task Scheduler* was selected for a backup set, the scheduling settings for the selected backup set can be accessed with the button Schedule in the Z-DBackup settings window. The scheduling wizard lets you define any options that you want to use for the backup set.



User Account

To make sure that Z-DBackup has appropriate access permissions to access files during a backup, even if no user is logged in at the workstation at the time of the backup, Z-DBackup requires a user name and password for a user account if it is started on schedule. If your user account does not have a password, you need to specify the login data of the administrator account. If you have created a dedicated user account for backups, you should use the login info of this account.

Windows Task Scheduler can only start programs if user name and password were entered correctly!

You can find extensive information on Windows Task Scheduler in the Windows help files (Start → Help → tab Index → search term Task Scheduler).

You can find additional settings on the second tab in the dialog window.

Here you have various options:

Do not show Z-DBackup windows
No Z-DBackup windows are shown. Any communication between the program and the user's desktop is disabled.

Allow multiple instances of Z-DBackup

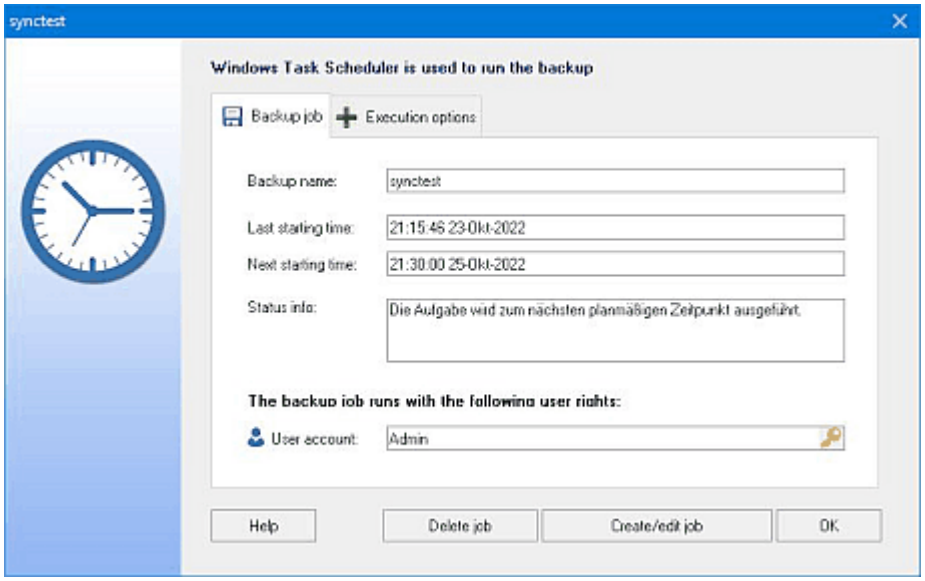
The default setting is that only one instance of Z-DBackup can be run at a time.

Full backup
Run a complete backup with an incremental or differential backup set.

1.1.22.2. User Permissions

Windows Task Scheduler

A user account with a password must be specified if Windows Task Scheduler should be used for automated backups. If your user account has no password, you should specify the administrator account (user name/password). If you have created a dedicated service account for your backups, you should use this here.



You can find additional information on Windows Task Scheduler in the Windows help (via Start button -> Help -> "Index" tab -> search for "Windows Task Scheduler").

1.1.22.3. Password

Windows Task Scheduler user account

Enter the user name and password for a windows account. The task is run as if it was started by that user. The scheduled task is not run if no password is specified (even if none is needed).

The user name must be given in Microsoft notation, i.e. domainname\username or computername\username.

This button shows the stored password as normal text. If this button is not displayed, the option "Hide button to display passwords" was activated in the program settings.

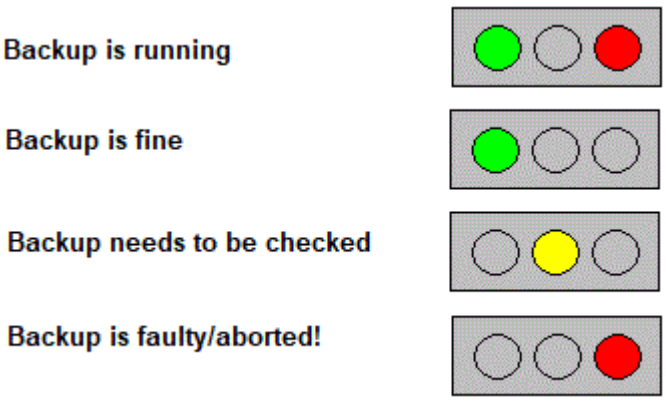
If the user account is not password-protected, the task scheduler will not run correctly. Allowed characters are: 0-9, a-z, A-Z and the symbols _ ! % / & ( ) ? . - ; + : @ * # [ ] { } € § | ~ = $ ".

It is always a good idea to use dedicated service accounts and not an administrator account. This makes it easier to change the admin password later.

1.1.23. USB Backup Light

For daily backup with Z-DBackup there is an easy way to display the success of the backup.

The backup light is a simple yet very effective signal device that is controlled by Z-DBackup and even works over a local network. It looks like a traffic light with three light areas in red, yellow and green. The light areas consist of seven superbright LEDs



If the backup light should be used with Z-DBackup, the option ***Use Backup Light*** must be enabled in the program settings (Tab Protocol). The Backup light can be plugged into a USB port on the local computer or alternatively on any other computer in the local network where Z-Cron is installed.

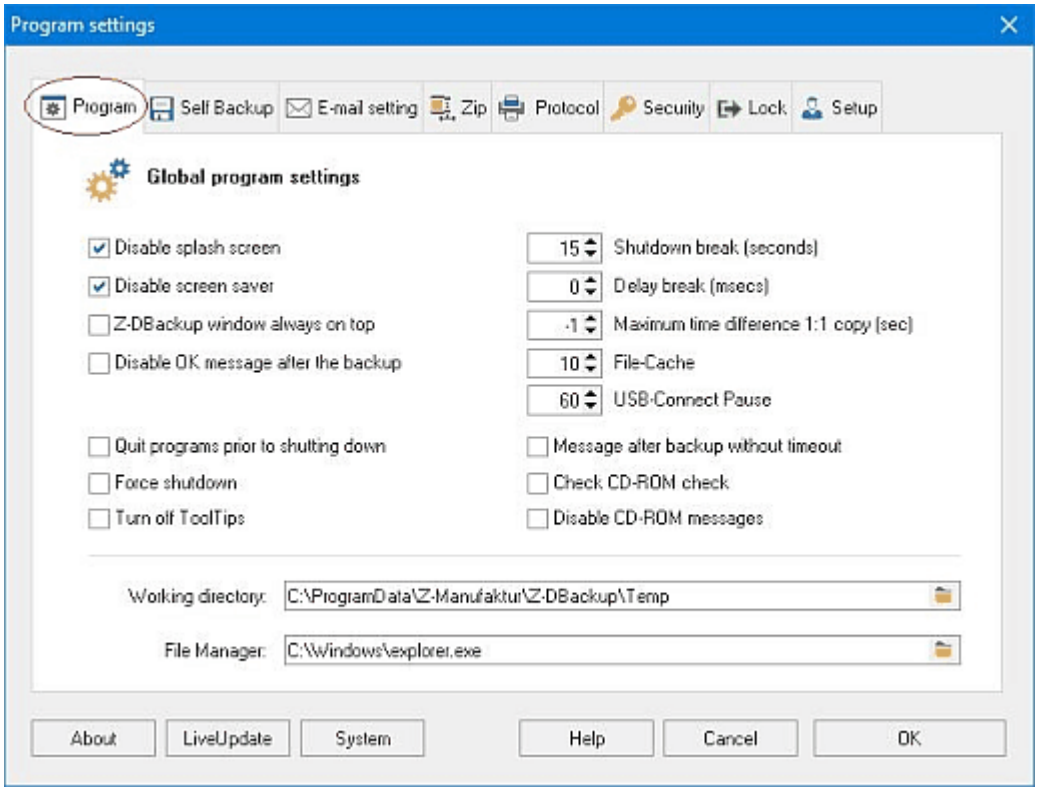
Short description of the USB Backup Light

- Superbright LED signal lights with 3 illuminated areas in red, yellow and green.
- USB plug with a ca. 1.8 m long cable.
- Black plastic case size ca. 40 x 90 x 23 mm
- Working temperature -20 to +80 Celsius
- Works without special driver software on Windows operating systems with USB support
- Use only indoors.
- Energy consumption max. 440 mA
- 2 years warranty
- Made in Germany

Cleware - Online Shop

1.2. Program Settings

Program Settings
This program window contains all those settings which apply to all backup sets.



1. Column

Disable splash screen
Disable the flash screen that is shown at program startup. This option has no use for unregistered versions. The flash screen of the freeware version automatically disappears after ca. 10 seconds.

Disable screen saver
Disable the screen saver while a backup is running. Note that a screen saver can cause severe performance problems, depending on its complexity, which can also lead to much slower network traffic. This option should therefore be activated.

Z-DBackup window always on top
Keeps the program window on top of other windows while it is open.

Disalbe OK message after the backup
The message shown after a backup won't be displayed any more

Quit programs prior to shutting down
This option makes Z-DBackup close all open programs before shutting the computer down.

Force shutdown
With this option you can force the shutdown to happen, which is sometimes necessary if shutdown problems occur under Windows.

Turn off Tooltips
Turns most tooltips in Z-DBackup off. This is usefull when using Z-DBackup with touch devices.

2. Column

Shutdown breack
Waiting time in seconds before the system is shut down (if "shut down after backup" is activated). The time can be set manually; default is 60 seconds. This allows drives with removable mediums to clear their buffers/cache before the system is shut down. If you use UDF drives, you should always set this value to at least 60 seconds.

Delay break
A break for the backup process, in which the program does nothing, to ensure that Z-DBackup can work with slow components (USB 2.0 or network drives) without freezing. This setting only takes effect if the option "Maximum performace" is deactivated in the backup set.

Max. time stamp difference
With this option, you can ignore a difference of up to 1024 seconds between the time stamps of two files and in this case prevent copying of the source file (only in 1:1 file copy mode). This option can be used for copying data between different file systems, e.g. NTFS and FAT, because the date of a file can change slightly when it's copied between file systems. For more info, see the Microsoft knowledge base.

File Cache
Not used in the current version. (only there for test purposes)

Message after backup without timeout
The message displayed after a backup won't close automatically after a certain time.

Disable CD-ROM check
Z-DBackup automatically recognizes UDF-formatted CD/DVD mediums If that should not work on your system, you can manually disable Z-DBackup's writing lock for CD/DVD/Blu-Ray drives with this option.

Working directory
Here you can specify the working direcory for caching files. Note that you need reading and writing access to that directory. Also make sure that enough free space is available in that location. If the option Caching is activated, the whole backup is created in this directory before it's copied to the actual target folder.

File Manager

If you use an alternative Windows file manager, this can be configured here in the program setup.

1.2.1. Create Emergency Disk

Create a backup of all configuration files from Z-DBackup including configuration data about all created Backup Sets. This Self Backup can then be used to restore all settings and Backup Sets after a clean install of Z-DBackup.

	File:	Program:
	z-backup.dat	Z-DBACKUP
	z-backup.ini	Z-DBACKUP
	uncpass.dat	Z-DBACKUP
	z-backup.lic	Z-DBACKUP
	z-cdburn.ini	Z-DataBurn
	z-tape.ini	Z-TapeDump
	ftppass.ini	Z-FTPcopy
	ftppass.dat	Z-FTPcopy
	FileBackup	Z-DBACKUP
	RegBackup	Z-DBACKUP

Drive/directory selection
To save the program data using a transportable disk (eg. USB stick).

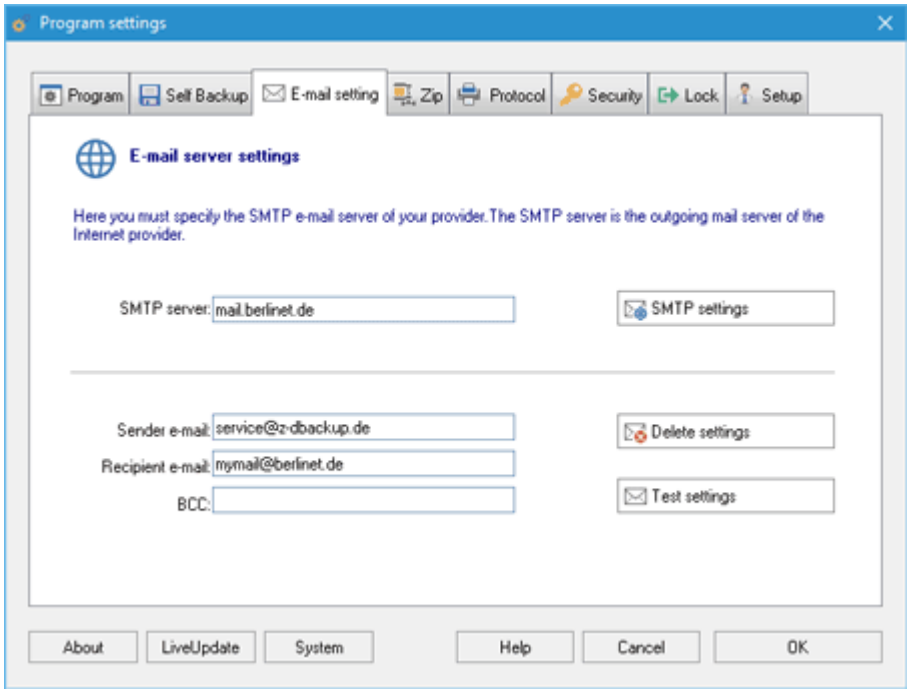
Backup index files	Includes the backup index files in the Self Backup. (the don't necessarily have to be backed up as the are automatically generated if missing)
Log files	Includes the log files in the Self Backup.
Clean up	Delete "orphaned" or no longer used setup files.
	Open an Explorer window for the backup directory.
	Calculate the size of the files which are being backed up.
Restore	Restore all program files and settings from a previously created Self Backup.
Self Backup	Start the backup of all important Z-DBackup files and settings.

1.2.2. E-Mail Server Settings

This is the tab for the global settings for sending e-mails with Z-Dbackup.

Specify the SMTP Server which Z-DBackup should use for sending e-mails and the default e-mail address to where

Z-DBackup will send the status reports for backup sets.



The button **SMTP settings** opens a window, where you can specify all settings of the SMTP server which Z-DBackup will use for sending e-mails.
The SMTP server can be an IP address or a domain name.

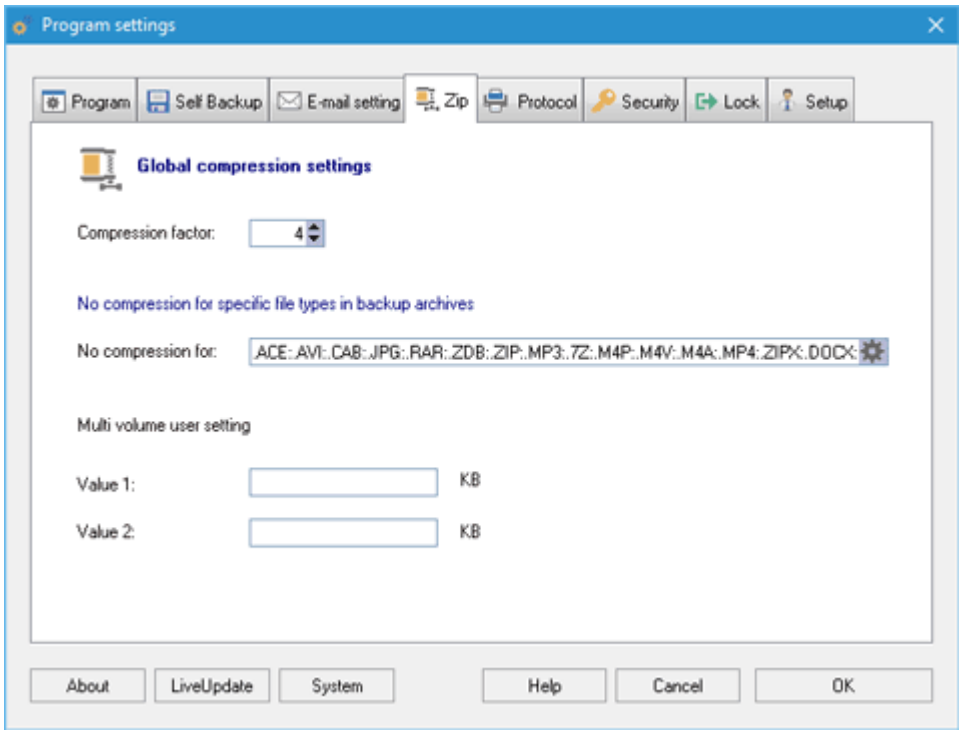
Sender e-mail
This is the e-mail address that the receiver will see as the sender address. You have to enter a sender e-mail address but this address doesn't have to be an existing one.

Recipient e-mail
The default e-mail address that Z-DBackup will send the e-mail to.
You can also enter a recipient e-mail address in the settings of each backup set, in case you want Z-DBackup to send the reports of different backup sets to different e-mail addresses.

BBC
The e-mail address to which a blind copy of every e-mail should be send.

Test settings
An e-mail will be send to test the given settings

1.2.3. ZIP Settings



Compression ratio
Setting for the compression for the value "Normal" for backup sets.

No compression for certain file types
Some file types (e.g. text files) can usually be compressed by 90% or more, while the typical compression ratio of other file types may be around 50% (e.g. executable files). If, however, you come across files for which no reasonably compression ratio can be achieved, these files usually already contain compressed data (e.g. MP3, ZIP, JPEG files). The time required by very large backups can be reduced significantly if the file types that should not be compressed are specified here. If, however, you set up a backup set to use "extreme compression", this list is ignored.

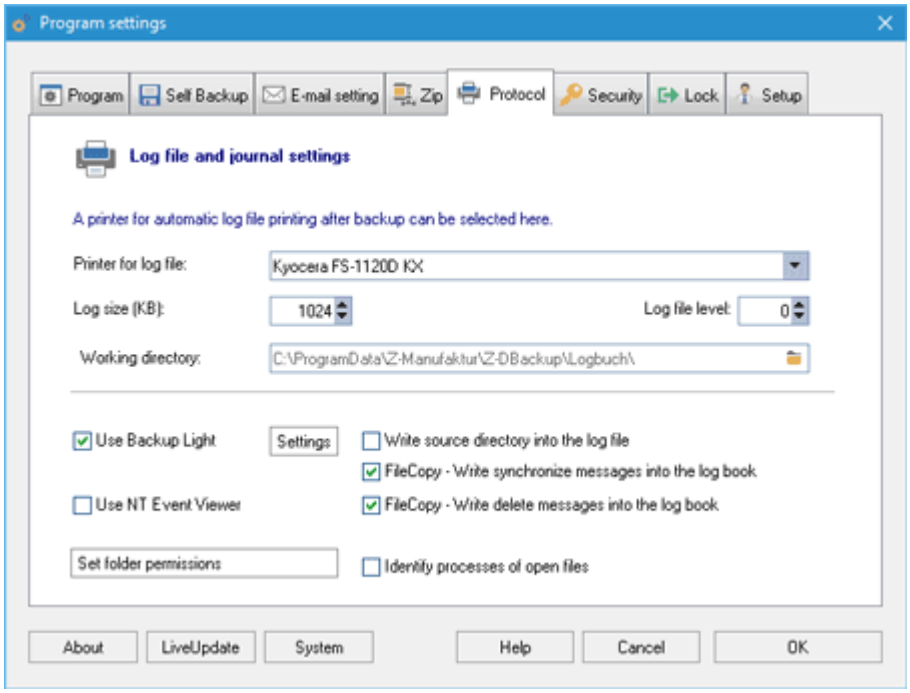
Multi-Spanning user values
You can enter two settings for multi-spanning on your hard disk. The size for archive parts is specified in KB and should be a multiple of 64 KB. The value should be between these minimum and maximum values:

Z-DBackup	Min:	Max:
Standard version	64 KB	1,048,676 KB (1 GB)
Professional version	64 KB	25,165,824 KB (24 GB)

Notes on choosing multi-spanning values

1.2.4. Log File

Here you can select a printer for automatically printing the log file after backup.



Printer for log file
Here you can select an installed printer.

Maximum log file size
Maximum size of the log file. If the log file is larger than this value, it is automatically deleted prior to backup. The value must be between 4 KB and 1024 KB, the default setting is 64 KB.

Use backup light
Use the backup light, our USB signalling device.

Use Windows Event Viewer
Z-DBackup status messages are also forwarded to the Windows Event Viewer.

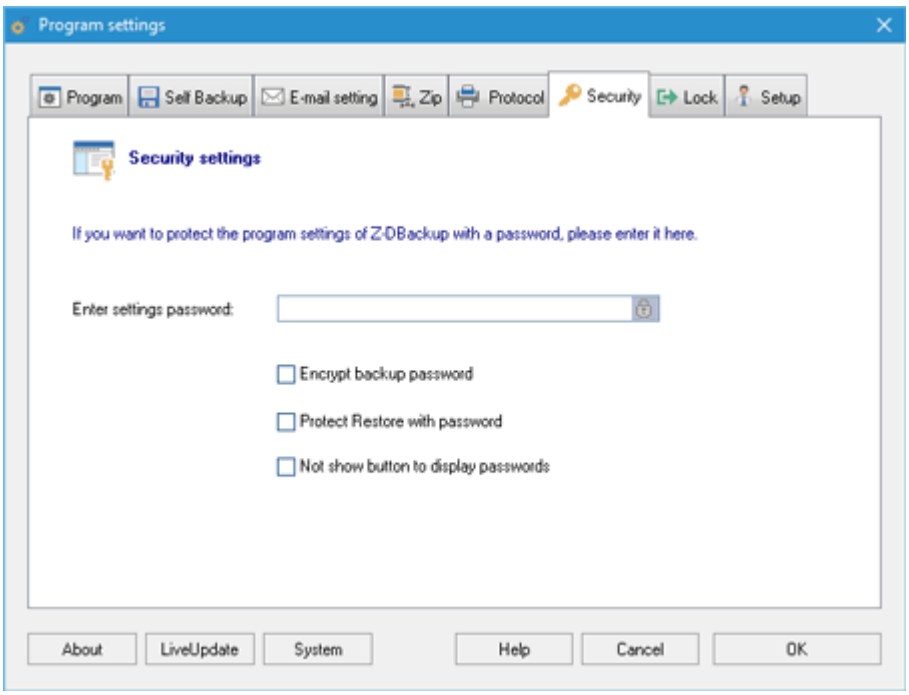
Record source directory in log file
The source file and directory selection is written into the log file during each backup. This setting is recommended.

File Copy - Record synchronization messages in log file
If this setting is enabled, the files that are synchronized during a backup session are written to the log file. Please not that the log file can quickly become very large if this setting is used

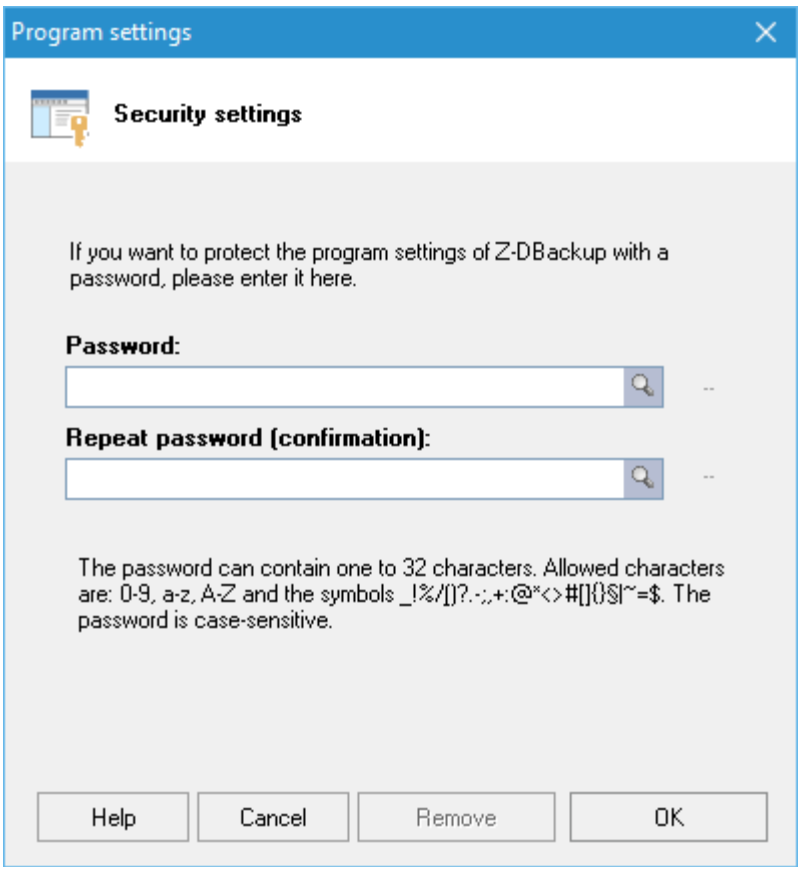
File Copy - Record deletion messages in log file
If this setting is enabled, the files that are deleted during a backup session are written to the log file. Please not that the log file can quickly become very large if this setting is used!

1.2.5. Settings Password

Settings Password
If the program settings of Z-DBackup should be protected with a password, you can enter one here.



The settings password can keep your settings safe from changes by accident or by unauthorized users.



Encrypt backup password
Passwords for backup archives are stored encryptedly. However, Z-DBackup by default saves the passwords in its configuration files without encryption. If this does not satisfy your security demands, you can set this option to also encrypt the password in the backup archives.

Protect Restore with password
Calling a restoration from the Z-DBackup main window can also be protected with the settings password. This option ensures that no restoration can be run by accident. This settings works independently from a possibly existing password for backup archives!

Hide button to display passwords
If this option is inactive, passwords can be shown in normal letters by clicking on the magnifying glass symbol next to the password field. To increase security by not giving others the chance to see your password, you can enable this option and protect the program settings with a password.

1.2.6. Z-OpenLock

Z-OpenLock

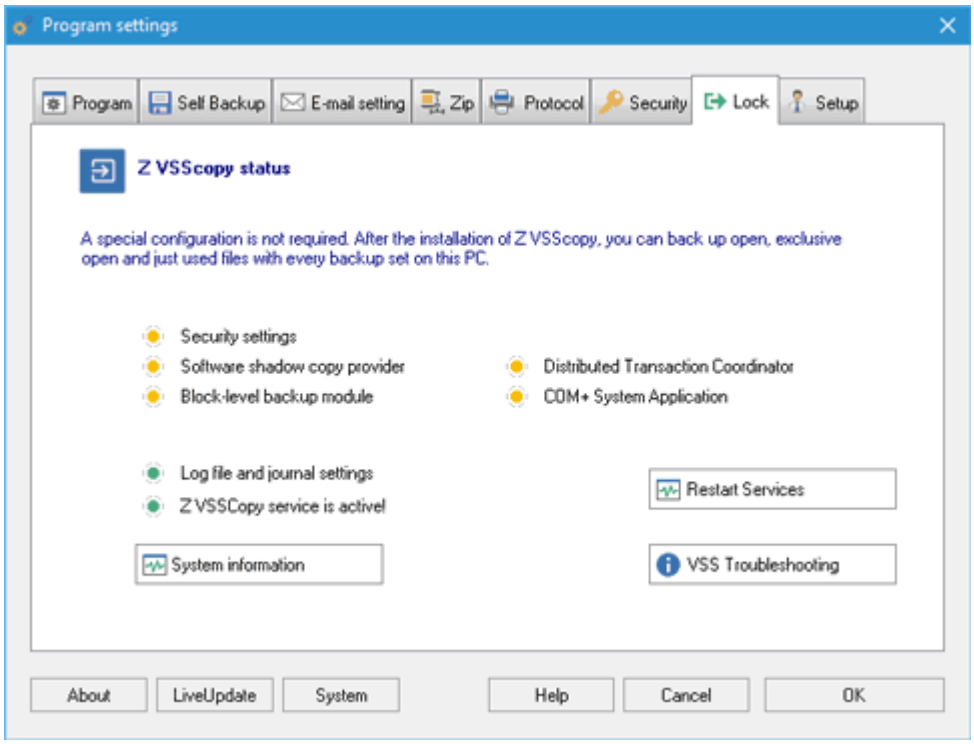
The development and distribution of Z-OpenLock was discontinued and the program was replaced by the improved successor Z-VSScopy.

Z-VSScopy

- **Add-On Modules**

1.2.7. Z-VSScopy

Setting up our software is a breeze with our setup routine. No special configuration is needed. After the installation, you can immediately back up any open, locked and currently used files with every backup set.



Z-VSScopy Status
The current status of 5 system services as well as the Z-VSScopy service is indicated here.

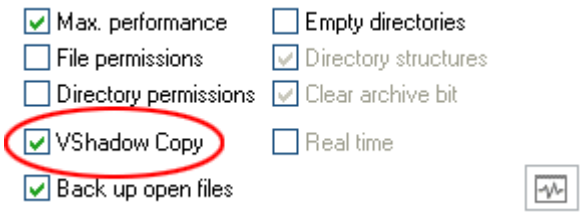
GREEN: Service is currently running.
YELLOW: Service isn't running but also not completely deactivated.
GREY: Service is deactivated.

Buttons

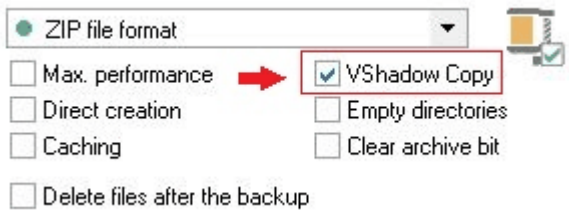
System information	Lists the shadow copy system setting as well as the VSS writers and VSS providers ir
Restart Services	Restarts the 5 displayed system services.
VSS Troubleshooting	Opens a manual page containing troubleshooting information in case you encounter V

Note:
You have to enable the option ***VShadow Copy*** in the settings of each backup-set that should use Z-VSScopy's service.

1:1 copy



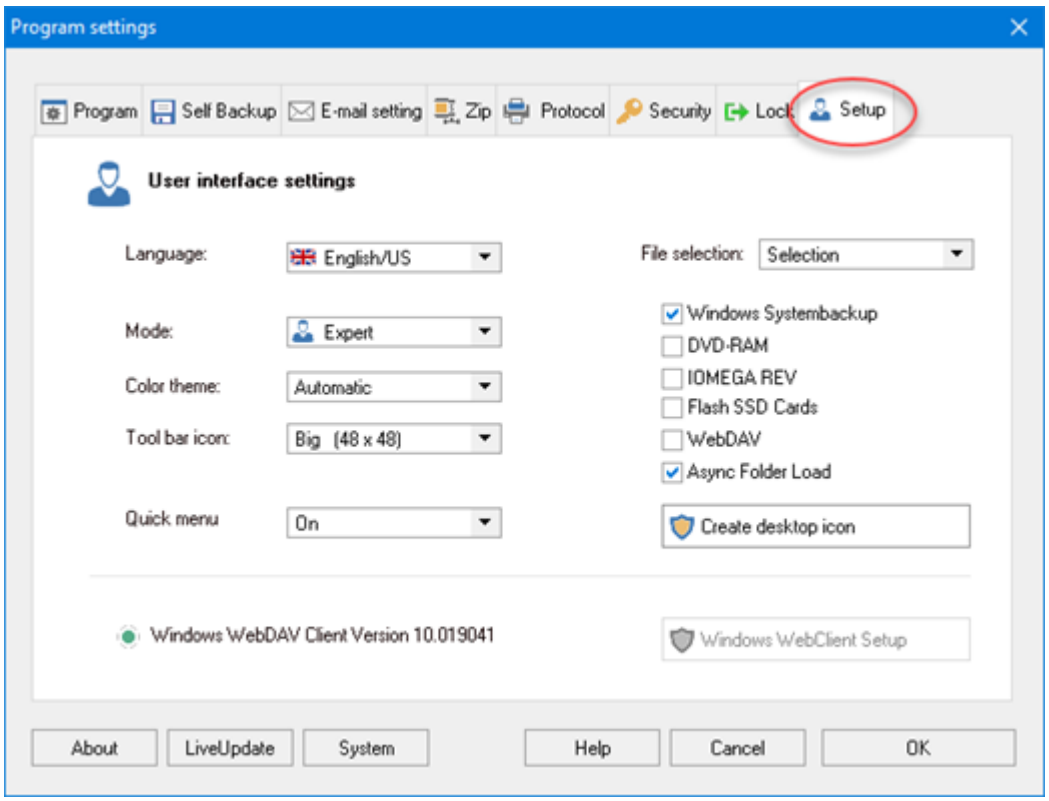
Backup archive



Z-VSScopy

- **Add-On Modules**

1.2.8. Program Settings



Program Language
On the first run, the program checks the system language. If the system is in German, this will also be the program language; if it isn't, the program will be set to English and stores this setting. This setting can be changed here.

Program Mode
Here you can switch between User Mode and Expert Mode. Expert Mode is the normal program mode prior to version 5.9. In the new User Mode, all Backup Set properties are set and changed via the Wizard.

Color Theme
You can switch to a color theme and icon style of older Z-DBackup 5.0 versions.

Toolbar Icon
Change the icon size in the main window between 32x32 pixels and 48x48 pixels.

Quick Menu
If the Quick Menu is enabled, the toolbar buttons from the main window plus additional shortcuts to certain functions are displayed in a pulldown menu.

File selection
If Z-DBackup 5.0 is selected, the old file selector is used. (e.g. when you select source files or when you select files you want to restore)

Windows System Backup
Enables the menu entry for a **system image backup** in the quick menu. A restarts of Z-DBackup is need to take effect.

DVD-RAM
Turns on drive recognition DVD-RAM so that it can be used as a target drive.

Iomega REV
Turns on drive recognition for Iomega drives / loaders so that it can be used as a target drive.

Flash SSD cards
Activates the detection of SSD cards as target drives.

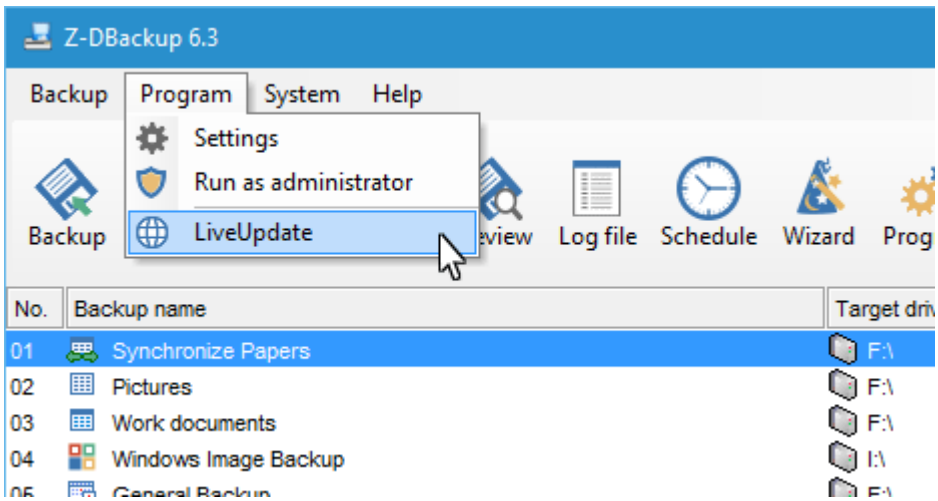
Windows Web Client Setup
Z-DBackup can optionally use the Microsoft WebDAV client, e.g. to create a data backup in the cloud.

Create desktop icon
Creates a desktop shortcut that start Z-DBackup with administrator rights.

1.2.9. Live-Update

We continually work on our software products to to further develop and optimize them and adjust them to new computer technologies. We also fix software bugs during this process. The LiveUpdate feature allows you to quickly look for updates in regular intervals. When you download an update, the installation will begin automatically.
Data Protection Declaration - LiveUpdate

We recommend to use LiveUpdate regularly, because bugs are fixed in the updates and new features are added to the software.



Z-DBackup users can make the software up to date with LiveUpdate. It is important that you do not manually download a new version from our website, because installing it would downgrade your Z-DBackup to the free standard version.

Help
Opens this help window. You can also press F1.

Interval
Set the time interval for LiveUpdate checks. You can also completely disable the update check.

Internet
Various options regarding the internet connection.

Update Check
With this button, you can check if there is a new version of this software available in the internet. The status bar at the bottom of the window gives you information about possible updates.

Download
If the update check was successful, you can proceed to download the new version. The installation starts automatically after the download is finished.

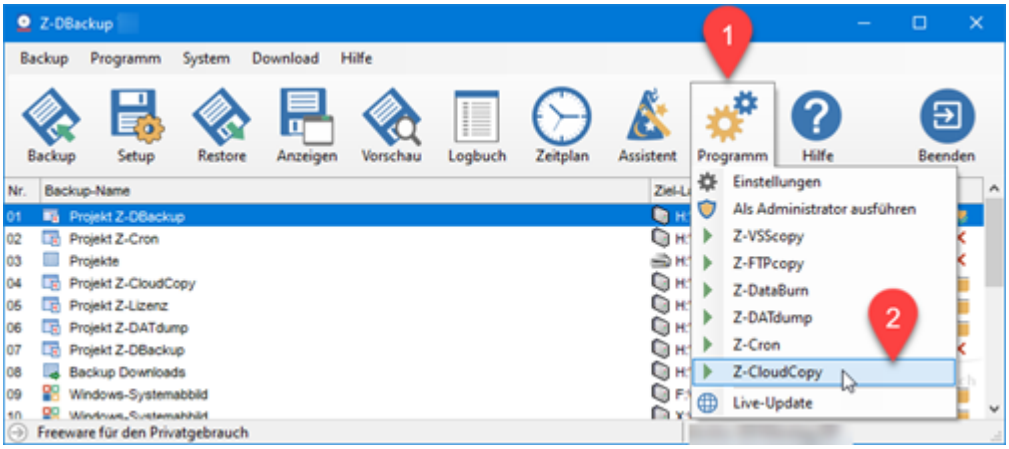
1.3. Cloud Backup

1.3.1. Z-CloudCopy Cloud Login

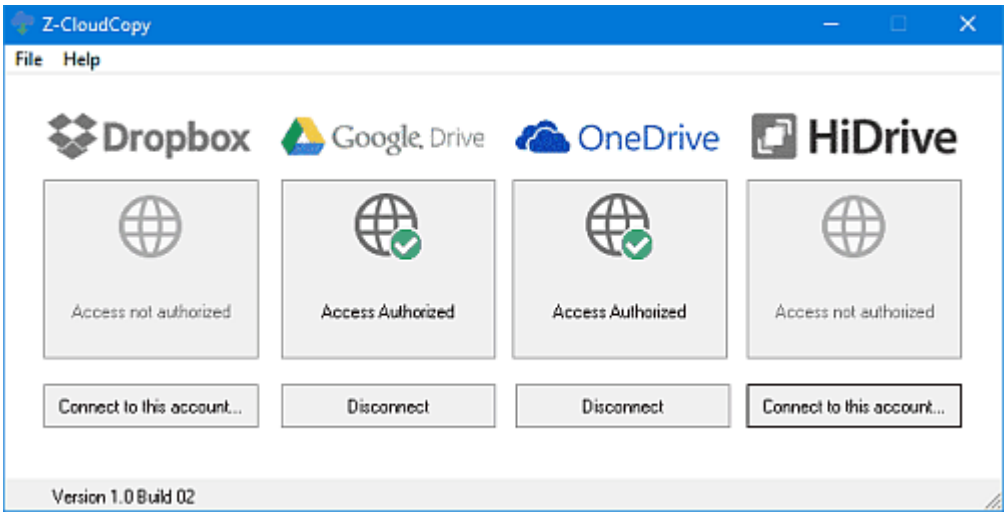
The cloud services Dropbox, Google Drive, OneDrive and STRATO HiDrive are supported by Z-CloudCopy. Z-CloudCopy uses the OAuth2 protocol to connect to cloud storage services. The user name and password are entered directly on a website of the respective cloud storage service and are never read, used or saved by

Z-CloudCopy itself.

Once set up, this enables automatic cloud backup without directly knowing the login details for the cloud account. This means that the cloud storage can be used by different computers or employees.



The Z-CloudCopy main window shows which cloud storage accounts the program already has access to and which ones it doesn't. A cloud backup to cloud storage is only possible with prior authorization from you.



Set up access for a cloud storage account

Click Connect to this account Now under the relevant cloud storage service to authorize Z-CloudCopy to access your cloud storage and follow the sign-up procedure for each service.

Delete access data / change account

Z-CloudCopy can only have access rights to one account per service at a time.

Click Disconnect to delete any access and/or refresh tokens stored by the program and, if possible, to revoke the tokens beforehand. Without these tokens, Z-CloudCopy will no longer be able to connect to your account and you can authorize Z-CloudCopy to access another (or the same) account.

Check which account you have access rights to

For a service that has already been authorized to access, click the green tick to indicate which account Z-CloudCopy has been connected to.

Revoke access rights online

You can revoke Z-CloudCopy's access rights to your account in the online portal of the respective cloud storage service. The process varies from service to service. After that, Z-CloudCopy can no longer connect to your account with the saved tokens and you must first delete the saved access data in order to authorize access again.

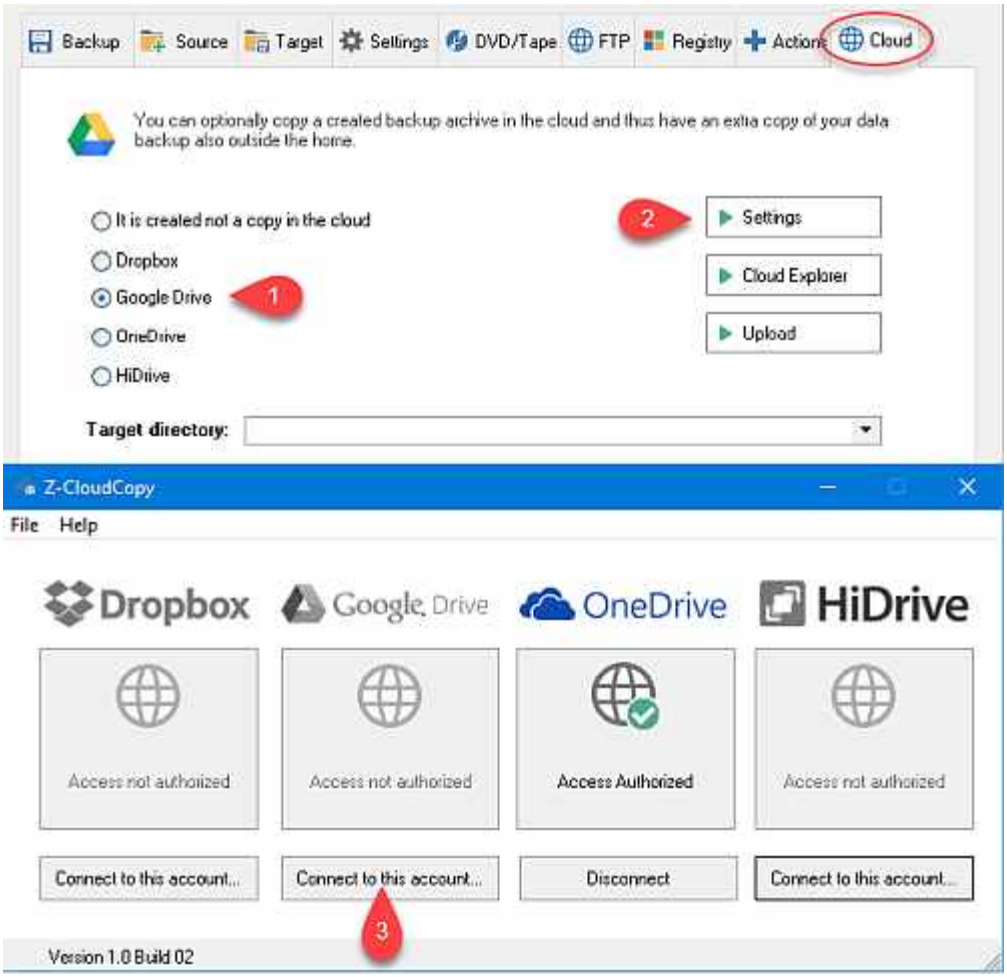
Cloud Backup

- Z-CloudCopy
- Cloud Storage Service

1.3.2. Z-CloudCopy

Z-CloudCopy is an add-on module that allows Z-DBackup to upload and download backup archives to and from cloud storage. The cloud services Dropbox, Google Drive, OneDrive and STRATO HiDrive are supported. The Z-CloudCopy module is already included in the Z-DBackup installation package in the freeware version.

The access data is configured using the Settings button.



Set up access for a cloud storage account

To allow Z-CloudCopy access to your cloud storage, click Connect to this account under a cloud storage service's icon and follow the sign-up procedure for that service.

Check which account has access rights to

For a service that has already been authorized to access, click the green tick to indicate which account Z-CloudCopy has been connected to.

Target directory in the cloud

Specify the target directory in your cloud drive. Directory names are separated with a / (slash). If no directory is selected, the root directory is used. Directories which do not already exist on the cloud server are automatically created.

⚠ While Windows does not make a difference between upper case and lower case in file names, some cloud services are case-sensitive (e.g. HiDrive)!

In licensed versions of Z-DBackup, the following macros can be used in the target directory:

<YEAR>	Year
<MONTH>	Month name
<WEEK>	Week no.
<DAY>	Weekday name
<PC>	Computer name

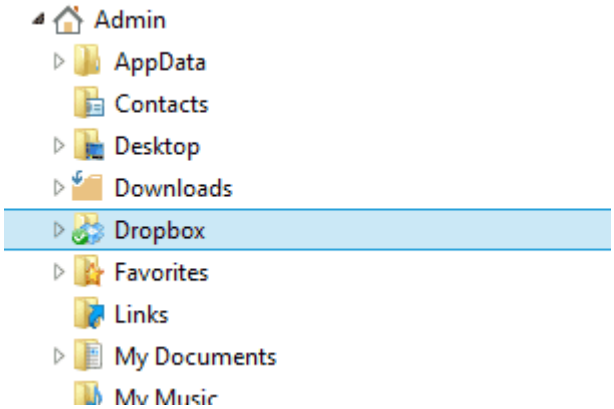
If you want to keep your daily backup for 7 days, use *Backup/<DAY>* as your target directory. A new subdirectory is created for each weekday. The backup archives are overwritten in the following week. If the cloud storage for the backups is shared among multiple computers in the company, you can use e.g. *Backup/<DAY>/<PC>* as a directory name.

.Cloud Backup

- Z-CloudCopy Cloud Login
- Cloud Storage Service

1.3.3. Cloud Storage Service

Many cloud storage providers offer client that can be installed on your system and creates a local directory whose content gets automatically synced with the cloud storage. Those cloud storage services include: Dropbox, OneDrive, Google Drive, Box and others



The local directory that synchronizes with the cloud storage is usually created as a subdirectory of the user directory.

If you want to create an online backup with Z-DBackup using a cloud storage service you just have to select this local directory as the target directory. The synchronization with your cloud storage and uploading of the files is then done by the software of your cloud storage service.

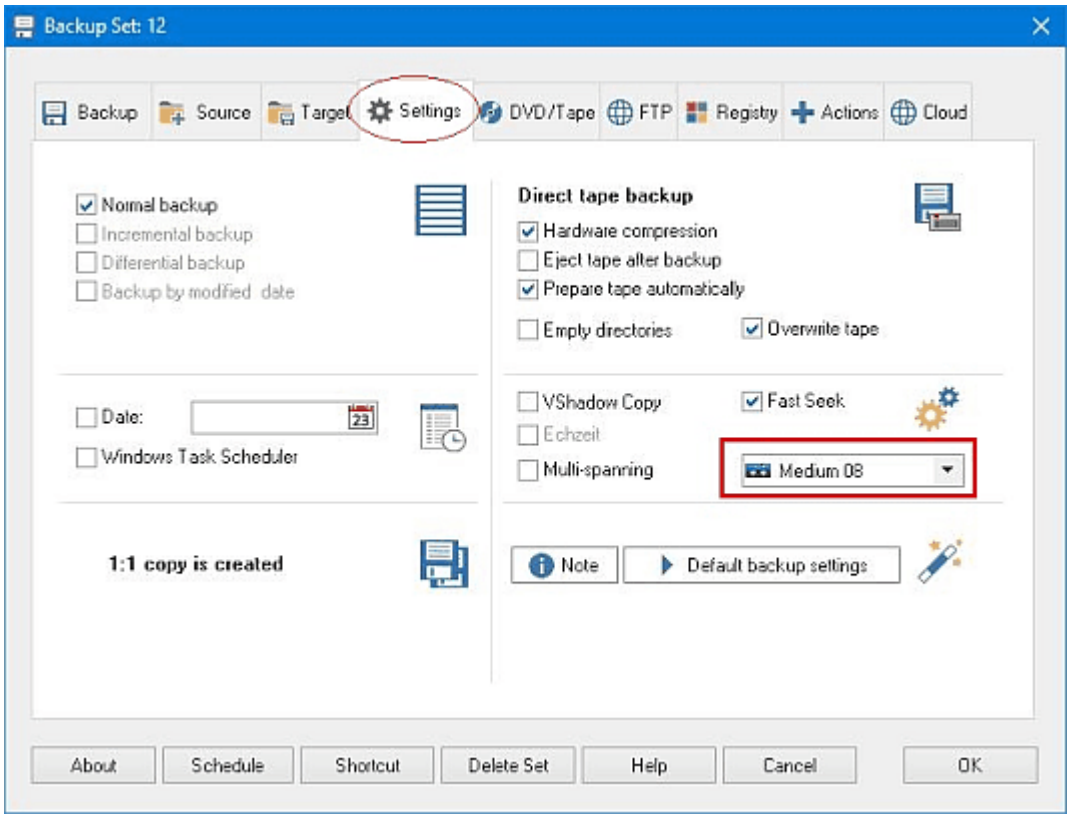
Cloud Backup

- Z-CloudCopy Cloud Login
- Z-CloudCopy

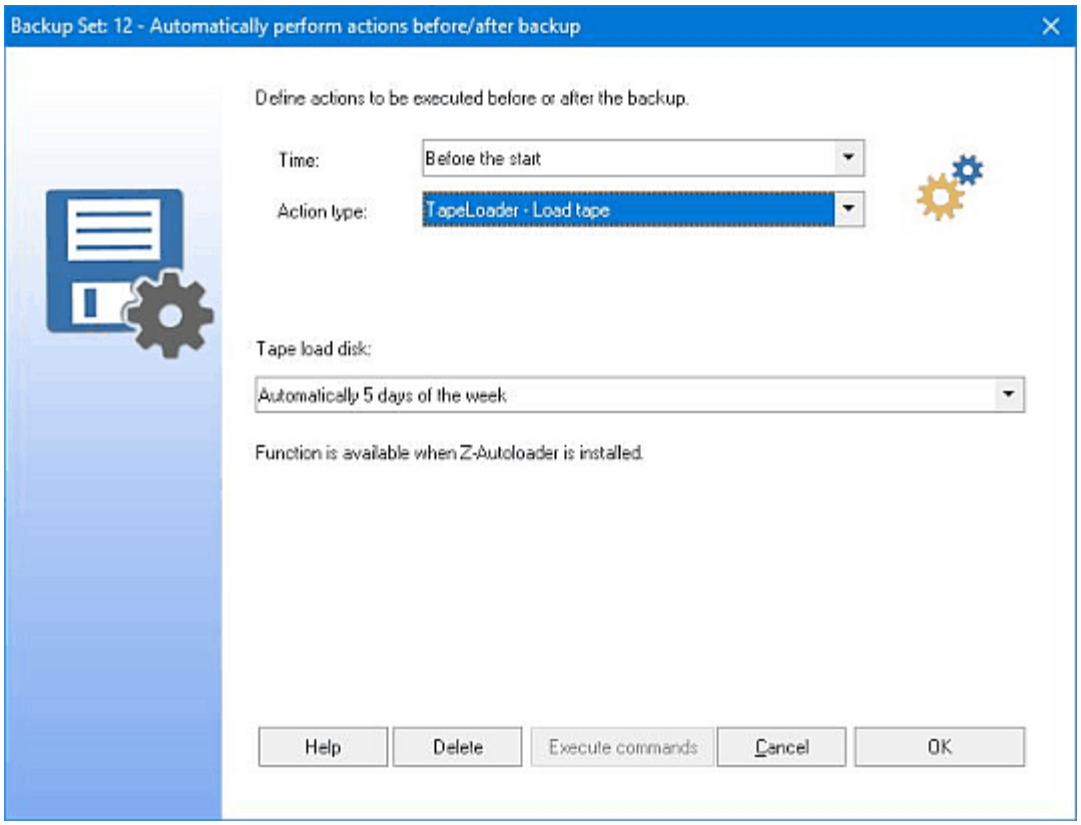
1.4. Tape Backup

1.4.1. Tape Libraries / Autoloaders

The add-on module Z-TapeLoader expands the range of features of Z-DBackup and Z-TapeBackup to control media changers, autoloaders and tape libraries, which allows for automatical tape change for your daily backup. Z-TapeLoader is automatically recognized by our backup software right after installation.



Alternatively, the loading/unloading of the tape media can be created as an action before/after the backup..



LTO Tape Backup

- Tape Backup
  - Tape Target
  - Tape Setting

- Add-On Modules

1.5. FTP-Copy

The add-on module Z-FTPcopy enables Z-DBackup to send backups to any FTP-capable server, possibly encrypted with AES. All you need is an FTP server with enough free space, not necessarily a Windows host.

The module Z-FTPcopy allows the use of heterogeneous storage environments outside of the backup network as the backup media. The option for FTP copy are activated only when the accessory module Z-FTPcopy has been installed on your computer. You can download the program for free from my website z-dbackup.de.

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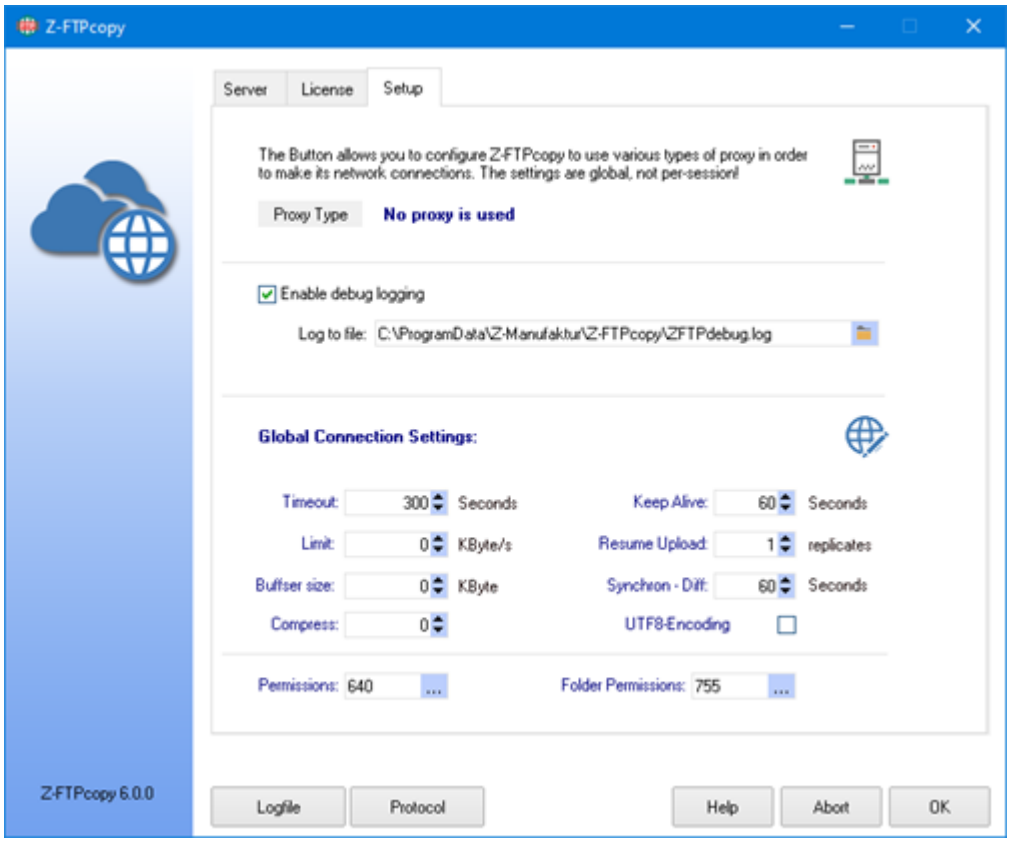
1.5.1. System Settings

Proxy Type

If your network is secured with a firewall and the firewall blocks FTP transfers, you can enable FTP transfers by specifying the correct parameters for the firewall. For this you need information about the firewall or proxy server setup from your network administrator.



Logging

Z-FTPcopy creates a log file to log the upload/download process. The files can be found in the program directory in the "Logbuch" folder.

With these log files you can also keep track of what happened during scheduled transfers if you use Z-Cron or the Windows-integrated task planner. The file should be deleted from time to time.

Global Connection Settings

Timeout
Z-FTPcopy can be configured to automatically terminate a connection which has been idle for a specified time.

Keep Alive
Some servers automatically terminate a connection after some time if no new commands have been sent by the client. Z-FTPcopy can send KeepAlive command in the specified interval to prevent that.

Limit (in KByte per second)
The maximum transfer limit for uploads and downloads. Z-FTPcopy won't use up more bandwith for up- and downloads than set here.
Default: 0 = no limit

Resume Upload
Files are uploaded in multiple chunks. If the upload of one chunk fails it has to be reuploaded. This setting sets how often at maximum the program trys to reupload a chunk that failed to upload correctly.

Buffer size (in KByte)
Files are uploaded in multiple chunks. This setting sets the size of those chunks.
A big buffer size enables higher upload speeds, but if a chunks failes to upload correctly a bigger part of the file has to be reuploaded.
A small buffer size reduces the upload speed, but if a chunks failes to upload only a small portion has to be reuploaded.
Default: 0 = automatic

For fast connections a high value should be prefered (> 256 KByte).

1.5.2. Proxy/Firewall

In some environments, the local network is protected from the rest of the internet by means of a firewall or proxy server. If your network is protected with a firewall or proxy which block FTP transfers, you can enable FTP transfers by specifying the correct parameters for the firewall. For this you need information about the firewall or proxy server setup from your network administrator.

Proxy type
You can select how you want to access the internet. You have the following options:

- **No proxy** Z-FTPcopy establishes a direct connection to the internet without using a proxy server. Use this connection type for internal FTP servers as well.
- **SOCKS4 Proxy Firewall** Use a SOCKS4 proxy server.
- **SOCKS5 Proxy Firewall** Use a SOCKS5 proxy server. You can also specify a username and password. If no login is required, leave these field empty.
- **SOCKS4a Proxy Firewall**

  Use a SOCKS4a proxy server. You can also specify a username and password. If no login is required, leave these field empty. The difference between SOCKS4 and SOCKS4a is the ability of the proxy server to access domain adresses. Microsoft uses SOCKS4a. Use this type of proxy server if the client computer is not able to resolve IP addresses to domain addresses.

- **WEB Proxy (with CONNECT command)**

Use the specified HTTP proxy server. This type of proxy server usually utilizes port 80 or 8080. NOTE: If you use this type of proxy server, you can only work in PASV (passive) mode.

Proxy
If you use a proxy server, specify the name or IP address of the server here.

Port
Enter the port number of your proxy server here. It is used for all FTP connections. Most proxy servers use port 21, but SOCKS servers use port 1080.

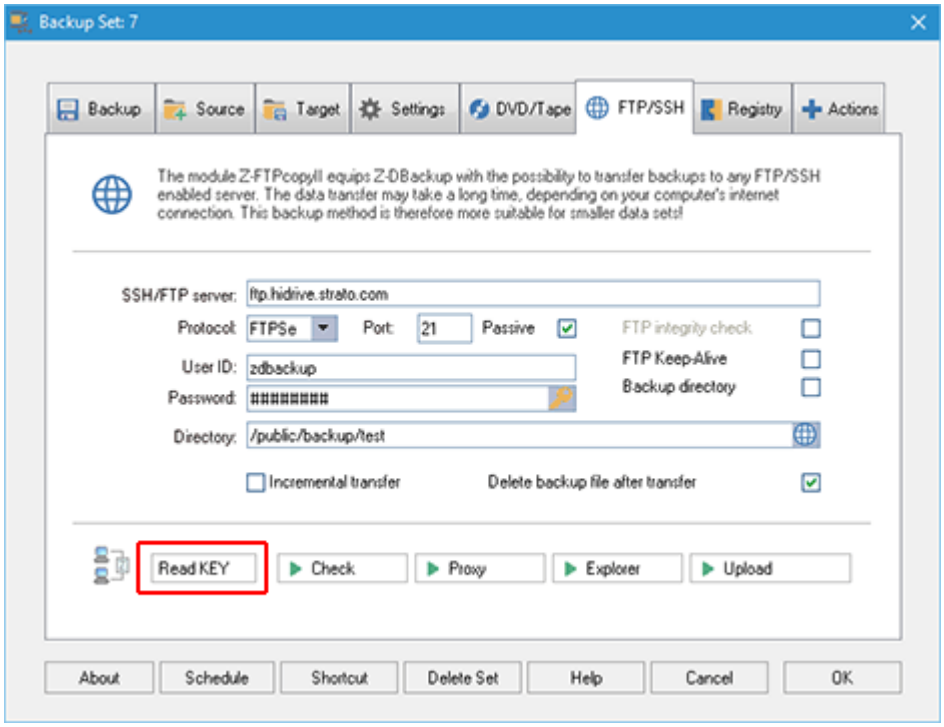
Login
If your proxy server requires a username and you are using the access types "OPEN", "SITE" or "SOCKS4", you can specify the username here. Otherwise, leave this field empty.

Password
If you have selected the access type "UserID = userid@site", you can enter a password for your proxy server here. Otherwise, leave this field empty.

1.5.3. Provider KEY

If you have key file from your Z-Cron (build in) FTP/SFTP Server, you can give Z-DBackup the key by clicking the button

Read key in the Z-DBackup FTP settings dialog.



FTP check
Use this button to check the specified login data for validity.

FTP proxy
If you want to use a proxy server, you can specify it here.

FTP explorer
You can use the FTP exlorer for quick and easy management of your backup directory on the server, and if necessary also for file selection prior to a restoration.

FTP upload
With this button you can automatically transfer your selection to the backup server.

1.5.4. Fingerprint

To ensure that data is exchanged with the right server when using an SFTP/FTPS connection, the server transmits a cryptographic fingerprint or its public host key prior to establishing a connection.

When the first connection is established, this key is yet unknown to the Z-FTPcopy program and has to be confirmed by the user before the first data transfer. If you have connected to an FTP server at least once and you are sure that this is the right server, you should save the fingerprint/key information. This enables Z-FTPcopy to automatically verify the fingerprint of the server at each new connection to ensure that no intruder is in the connection between the client and the server.

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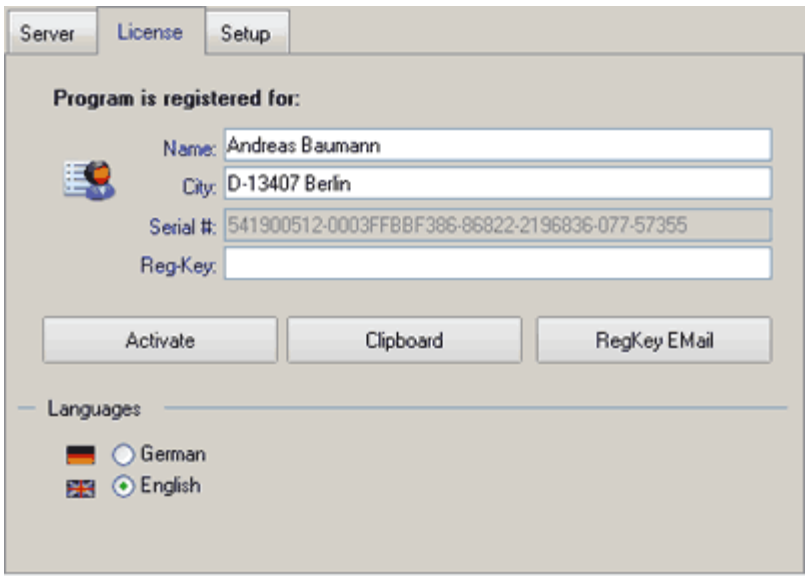
1.5.5. License

Shareware demands **customer fairness**: If a user wants to use a program beyond the trial period or obtain access to additional features, she has to register with the software manufacturer and pays a fee for the right to continue to use the software. Usually, the customer is also entitled to free or cheaper updates after registration.

In other words: shareware is **try-before-buy-software!**

Licensing Z-FTPcopy
Z-FTPcopy is licensed per operating system and computer. Send us the serial number or Z-FTPcopy after ordering and you will get a code to unlock your copy of Z-FTPcopy. Use the e-mail button in the info window for that.



Z-FTPcopy Language Setting
The program checks the system language at first startup. If it is German, the program starts in German, otherwise in English, and keeps this language setting. The languange can later be changed here.

1.6. Notes / Tips / Best Practices

1.6.1. Tips for a Good Backup

Backups are extremely important, yet they are often neglected, because they involve some work. But in a case of emergency, missing, not working or badly organized backups can entail severy financial loss for a company and lots of trouble and expenditure of time for private users.

That's why the following general advice should always be adhered to:

- Basically: Private data – Office documents, fotos and media files – always belong on their own hard disk partition, and not on the operating system's partition
- Backups should be run regularly.
- At least one backup should be kept in a different location.
- Several backups from different times should be available.
- The backups should be created on external mediums (USB hard drive, CD-RW, DVD or Tape) and not just on different partitions on the built-in hard drive.
- If you want to use CDs or DVDs for long-term storage of important data, you should check from time to time if your discs are still readable. Burned CD/DVD/Blu-Ray discs only last for a few years.
- **The best backup is useless in a case of emergency if the restoration does not work or you don't know how to do it. Therefore: test and learn the restoratino process with test data!**
- Make a resonable selection of the data you want to back up. For example, backing up program installations is often not required because you will can simply re-install the program. Most important are files that you created yourself.
- To minimize data volume and backup time, you can delete unused or outdated files prior to backup.

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1.6.2. Verify Backups!

Even the best backup has no use in a case of emergency if the restore does not work or you don't know how to do it. Test and learn how to restore your backups!

With context menu – verify, in the main window of Z-DBackup, you can check your created backups. Use this option to regularly verify your backups!

1.6.3. Not all files could be backed up!

If single files cannot be included in a backup, their names are listed in the log file. There are several reasons for a "FileLock":

- You tried to copy a file larger than 4 GB to a FAT32 formatted medium: read File Systems
- It can happen that a file is locked at the time Z-DBackup tries to copy it. This happens if it is currently accessed by other programs.
- Occasionally, it may happen that a file which can usually be accessed is for some reason locked at the time of the backup. This is generally not a real problem. Z-DBackup will try again to copy the file during the next backup.
- However, there are files which are always locked, such as the system's page file. These files cannot be copied the usual way.
- Access denied – Your user account does not have the required access permissions to access certain files.

Microsoft has introduced some security features in Windows which have to be taken into account for file operations. Generally,

Z-DBackup does not require administrator rights. These are only needed if files or directories that are protected by the Windows operating system should be included in the backup – see Notes for use with Windows since Vista. If the backup is started on schedule by Z-Cron, Z-DBackup gains the required access permissions from the Z-Cron system service.

The add-on module Z-VSScopy allows Z-DBackup to access files that are open or locked by other applications.

1.6.4. Backup Methods

Backup Mediums

Z-DBackup enables its users to create copies of their local files and directories on external drives and mediums. The main purpose of Z-DBackup is to protect the user from accidental data loss, e.g. by deletion or hardware errors. Because of its modular design, it supports a large variety of backup mediums.

Backup to floppy disks

- No-one needs a floppy drive because of the wide-spread use of USB sticks.
- simple and cheap
- Very time-consuming and troublesome
- Floppy disks are relatively vulnerable to external influences
- *Absolutely not recommended if more than five floppies are needed!*

Backup to hard disk

- A backup to hard drive is still better than none at all!
- Simple and fast
- Consideration: Backups on fixed internal hard drives can be damaged by fire or water or can be stolen, in which case you have lost your backups together with your original data. Therefore, only use external hard drives for backup!

Backup to an external hard drive

- When using a network, you can backup your data to the hard drive of another computer, maybe a server, preferably in another location.
- Very small, light and robust
- Simple and fast
- Consideration:
  - Who can then access the backup?
  - Enable encryption and password!
  - Is the external hard drive stored safely?

Backup to USB Memory Stick

- Has become a cheap and interesting alternative
- Usable just like a normal drive
- Not suitable as the only backup medium!
- Easy to handle and carry because it's so small, but therefore also higher risk to be lost
- Consideration:
  - Who can then access the data?
  - Enable encryption and password!

Backup to exchangeable hard disk

- If you install a removable hard disk drawer in your company and also in your home, you can just take the hard drive from the office home with you.
- If you only use the exchangeable hard disk, you still need another backup medium.

Backup to tapes

- Requires the add-on module Z-TapeBackup for SCSI drives (TRAVAN, DAT, QIC, MLR, AIT, LTO, DDS und SLR)
- Hardware costs from ca. $ 500,--
- Tapes between $ 3 and $ 30 depending on type and capacity
- Fully automatic backups possible
- *A good choice for regular backups!*

Backup to CD/DVD or Blu-Ray

- Requires the add-on module Z-DataBurn
- CD/DVD burners are available from ca. $ 20,-
- CD/DVD blanks are around $ 0,25
- Rewritable media are available (CD-RW or DVD-RAM)!
- *Good choice for e.g. weekly backups*

Backup to ZIP drive

- There are internal and external ZIP drives available
- Hardware costs are around $ 50 depending to type and capacity (100 MB, 250 MB or 750 MB)
- ZIP mediums cost between ca. $ 6,- and $ 15,-
- Simple handling, just like a normal drive
- ***Highly recommended*** *due to the low purchase price and ease of use!*

Backup to Iomega® REV

- Hardware prices start at ca. $ 200,-
- Mediums cost ca. $ 45 and have a capacity of around 35 GB
- Simple handling, just like a normal drive
- Is shown as a normal removable medium in the operating system
- A real alternative to traditional tape drives:
  - Fast: Can save and restore data eight times faster than a tape drive
  - Flexible: small medium dimensions allows for easy off-line archiving of your data
  - Secure: Unlimitedly rewritable mediums
- Available for ATAPI, SATA, SCSI, FIREWIRE and USB ports
- Transfer rate: up to 15 MB/s with USB
- *A good choice for regular backups!*

Backup to Iomega® REV Loader

- Hardware price starts at ca. $ 950,-
- Simple use, just like a normal drive
- Is shown as a normal removable medium in the operating system
- A real alternative to traditional tape drives:
  - Fast: Can save and restore data eight times faster than a tape drive
  - Flexible: small medium dimensions allows for easy off-line archiving of your data
  - Secure: Unlimitedly rewritable mediums
- Available for ATAPI, SATA, SCSI, FIREWIRE and USB ports
- Transfer rate: up to 15 MB/s with USB
- *A good choice for regular and automatic backups!*

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1.6.5. Backup Strategies

The Optimal Backup Strategy

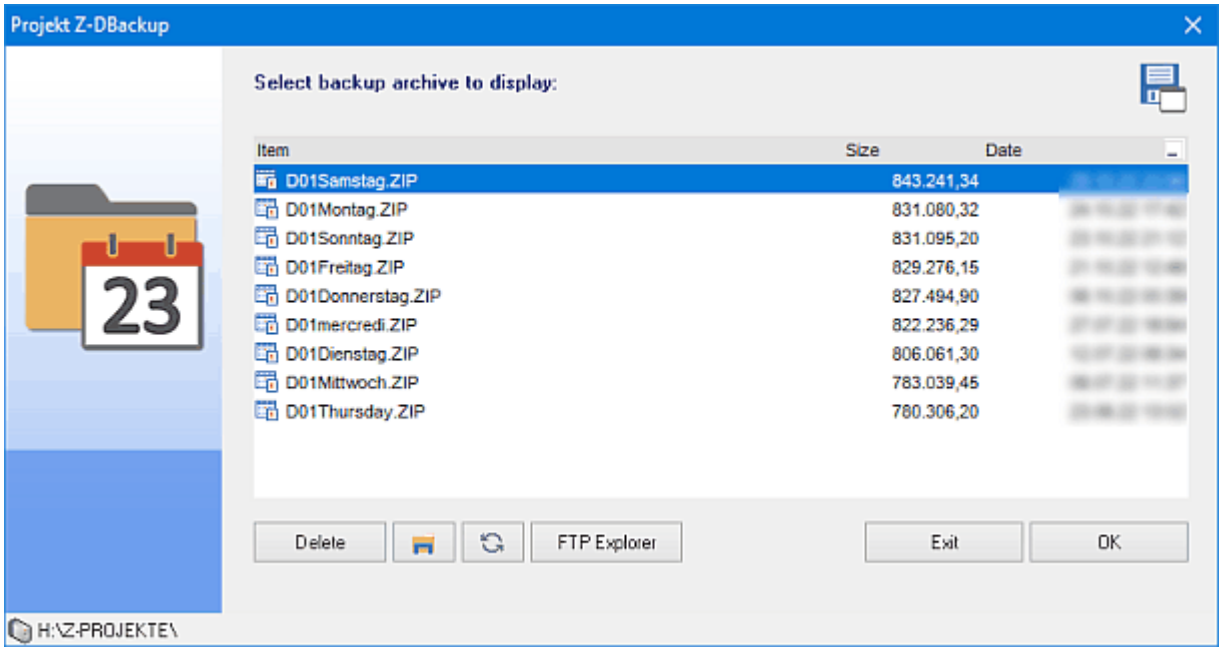
Z-DBackup supports various methods for backing up data on a computer or in a network. I will try to give you an

insight into different backup strategies that are possible with Z-DBackup.

Copy Backup (The Default Setting of Z-DBackup)

With Copy Backup, all selected directories are copied, but the files are not marked as copied (the archive attribute remains unchanged). A possibly preexisting backup file is deleted prior to backup. When you use this backup method, you only need the most recent backup file to be able to restore all your data. If you want to use Copy Backup, none of the five backup methods must be selected in the setup! Copy Backup is the default setting for a newly created backup set.

It can happen that a file was accidentally deleted or has been corrupted and needs to be restored. This will usually come to the attention of the user only after a few days, and in the meantime, the damaged file was already included in the last backup. For this reason, a *Copy Backup* should always be done according to the generation principle. If you use removable media for your backups, the copy backup should be done with different mediums. If the backup is copied to another hard disk or a network drive, the program option *Cron Backup* should be enabled to include the backup date in the name of the archive or directory.



Which files should I include in a backup?

Of course, it does not make much sense to back up files that you have available on a CD/DVD/Blu-ray anyway, the Windows system and installed programs that are available on CD/DVD/Blu-ray.

Most important are all files that you created yourself, such as documents, letters, pictures, e-mails, favorites/bookmarks, databases, configuration files, book-keeping data etc. that need to be kept or that you want to reuse on a new system, and also all smaller programs and tools, updates and drivers that you do not have on CD but which were downloaded from the internet or installed from CDs which are no longer available.

The backup is much easier if all relevant data is located in a directory structure underneath a common directory. Z-DBackup can include up to 255 different directories (plus all their subdirectories, of course) in one backup set. This allows you to easily copy all your data to another location or removable medium. Use the password option to protect your data from being accessed by unauthorized persons.

Daily Backup according to the generation principle:

- Create a backup set for your daily backups and create either a shortcut on the desktop or a schedule for automatic backups.

- *Suggestion*:

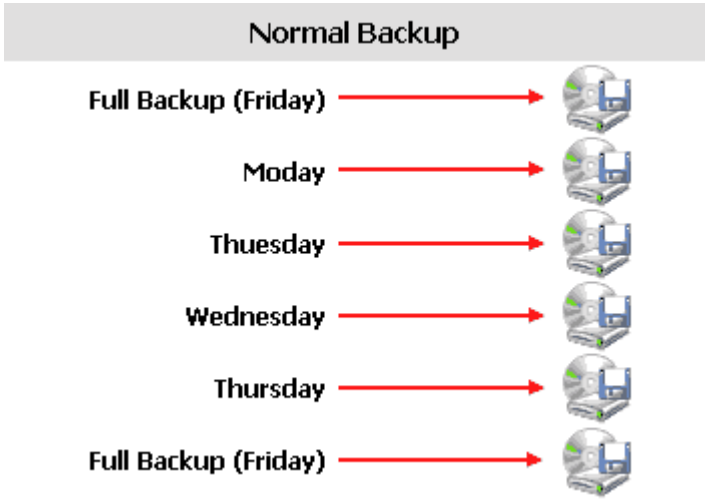
- Prepare four mediums and label them *Monday*, *Tuesday*, *Wednesday*, *Thursday*
- Prepare four mediums and label them *Friday 1, Friday 2*, *Friday 3*, *Friday 4*

1st week	MON	TUE	WED	THU	Friday 1
2nd week	MON	TUE	WED	THU	Friday 2
3rd week	MON	TUE	WED	THU	Friday 3
4th week	MON	TUE	WED	THU	Friday 4

- The mediums labelled Monday to Thursday are overwritten every week, the Friday mediums are overwritten every four weeks. This means you have a generational backup with which you can access snapshots of your data from different points in time, up to one month before now.

Normal Backup

With a normal backup, all your files are copied at each backup and are marked as such (the archive attribute is deactivated). You only need the most recent backup to restore all your data.

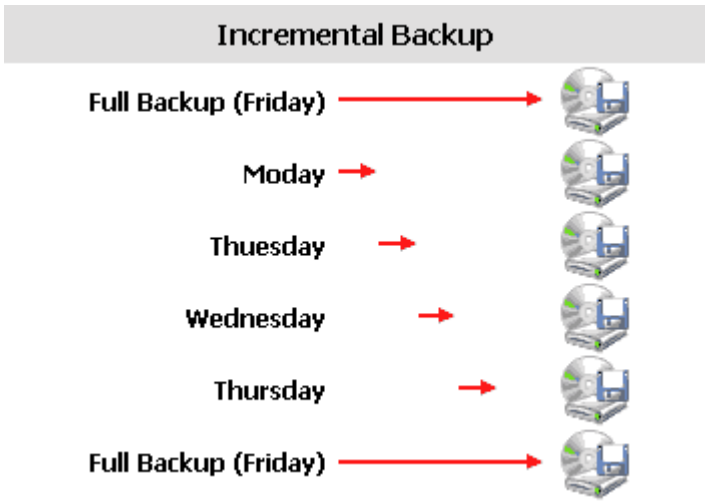


If the backup is copied to a second hard drive or to a network drive (which we recommend), you should activate the option *Cron Backup*, so that the backup file name contains the date of the backup.

Incremental Backup

A series of incremental backups starts with one full backup. At each following backup, only those files that were changed or have been created since the last (full or incremental) backup will be copied. All copied files are marked, i.e. the archive attribute is deactivated.

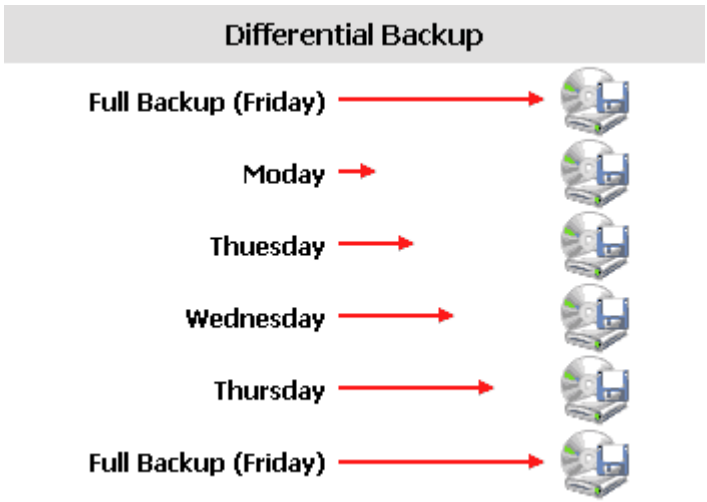
With this backup method, you need the most recent full backup and all following incremental backups to restore all your files.



Differential Backup

A series of differential backups starts with one full backup. At each following backup, only those files that were changed or have been created since the last full backup will be copied. The archive attribute of copied files is deactivated during full backups, but not during any of the following differential backups.

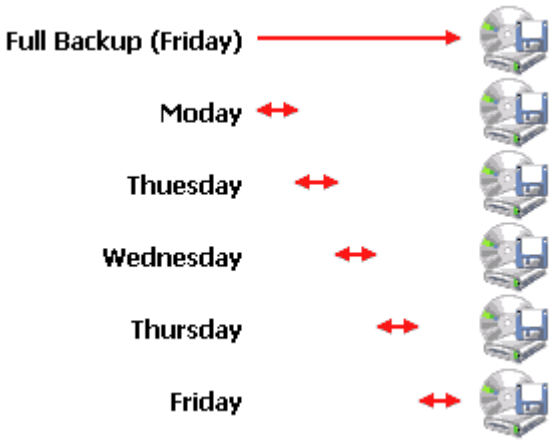
If you use differential backups, you need the last full backup and the last differential backup to be able to restore all your files.



The incremental and differential backup methods are quite similar. Both are used together with regular full backups, but need less time and space for the intermediate backups. With these backup methods, you would use the *Friday* mediums for full backups and the *MON–THU* mediums for differential/incremental backups. Then, on mondays, only files which have changed on that day are copied. On tuesdays, with incremental backups, only files which have changed on that tuesday are copied, i.e, anything which has changed since any last backup. With differential backups, files which have changed on monday or tuesday are copied, i.e., everything which has changed since the last FULL backup. The differential backups need a little more time and space than incremental backup, but the advantage is that you only need the last full backup and one last differential backup to restore all your files.

Data Synchronization

In addition to full backups, incremental and differential backups, Z-DBackup can also be used for sychronization/mirroring of files and directories. The program creates an exact copy of the data from the source directory in the target directory. The NTFS access permissions can be copied as well. When this method is used, only new or changed files are copied to the target directory. Optionally, data in the target directory which is not present in the source directory can be deleted automatically or with a user prompt.



This kind of backup is sometimes a little faster than differential backups and many users find it easier than incremental or differential backups.

Emergency backup and system recovery

Z-DBackup offers the possibility to create a complete image of a drive. Such an image of a drive differs from an ordinary data backup of "all" files on a drive with Z-DBackup in that information on the formatting of the hard drive, the file system used and the start sector be secured. In addition, with such an image backup, the hard disk is backed up in a consistent state. The entire operating system can later be restored from a generated Windows system image (an image of the system drive), e.g. after a hardware failure.

1.6.6. File Systems

There are limitations that come from the file system and those that come the operating system. A file system is a kind of basic format/structure for a hard disk that is created when the medium is formatted and later filled with files. There are three common file systems that can be used for hard drives on Windows computers:

Limitations of the different file systems

File system:	**FAT**
Partition size:	up to 2 GB
Maximum file size:	**2 GB**

File system:	**FAT32**
Partition size:	512 MB to 2 TB
Maximum file size:	**4 GB**

File system:	**exFAT**
Partition size:	up to 512 TB
Maximum file size:	**The maximum backup size is only limited by the partition size!**

File system:	**NTFS**
Partition size:	up to 256 TB (depending on the cluster size)
Maximum file size:	**16 TB on Windows 7 and older, 256 TB on Windows 8**

FAT32 partitions are still frequently in use, especially on external hard disks, because they are supported by many different operating systems. If a backup archive larger than 4 GB should be created on a FAT32 medium, the backup file is automatically split (multi-spanning).

FAT32 and NTFS – what you need to know about these file systems:

FAT32 – Advantages

- Almost all operating systems can read it, most can write it
- Almost all devices use it (Digital cameras, Receivers, MP3 players, …)

FAT32 – Disadvantages

- Maximum file size: 4 GB
- Therefore not always suitable for large backups!
- a bit slower than NTFS

NTFS – Advantages

- newer operating systems can be installed on it
- higher data rates
- file sizes up to 16 TB möglich
- writes data „intelligently“ to avoid fragmentation
- logs file changes to avoid data corruption if the computer freezes
- supports security permissions
- supports encryption of files and volumes
- supports compression of files and volumes
- faster defragmentation
- file accesses can be logged

NTFS – Disadvantages

- Windows ME and older cannot access NTFS volumes
- Devices cannot read it

Important

Limitations of Z-DBackup
The free standard version of Z-DBackup can save at most 10 GB (4 GB in a compressed backup archive) per backup set!


The standard version (freeware version) can only create multi-spanning files up to 2 GB in size.

1.6.7. Maximum Path Length

Length of Path and File Name

The length of a file path including the file name, all directory names and separator slashes, for example "\Dokumente\Texte\Privat\Brief.doc", can be 255 characters maximum. However, the default for Windows 2003, for example, is 248 characters, obviously including the drive letter and colon ("D:\") as well as the final string termination character (that is not visible).

In NTFS (from Windows 2000) every part of the path could in theory contain up to 255 unicode characters, with a maximum total path length of 32768 characters. To handle files with such pathnames, however, all programs would have to be unicode-capable, which is not the case, even in Windows Vista/Windows 7.

1:1 Copy in Z-DBackup
Z-DBackup is not a unicode program, but can handle path names with more than 255 characters. Like Windows Explorer, such files and directories cannot be shown in lists, however.

Backup ZIP Archives in Z-DBackup
Caused by limitations in the PKZIP 4.05 format, path names longer than 255 characters are not allowed and cannot be archived by Z-DBackup.

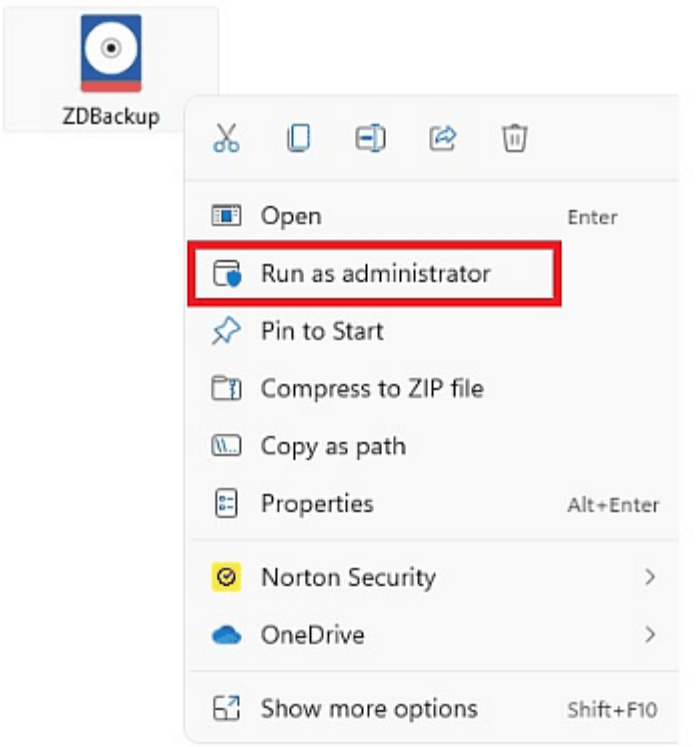
1.6.8. UAC – User Account Control

Notes for use with Windows 11, 10, 8, 7 and Vista

Microsoft has introduced several security features in Windows Vista that must be considered for file operations. Generally, Z-DBackup does not require administrator rights. Such permissions are only necessary if files that are protected by the Windows operating system should be included in a backup.

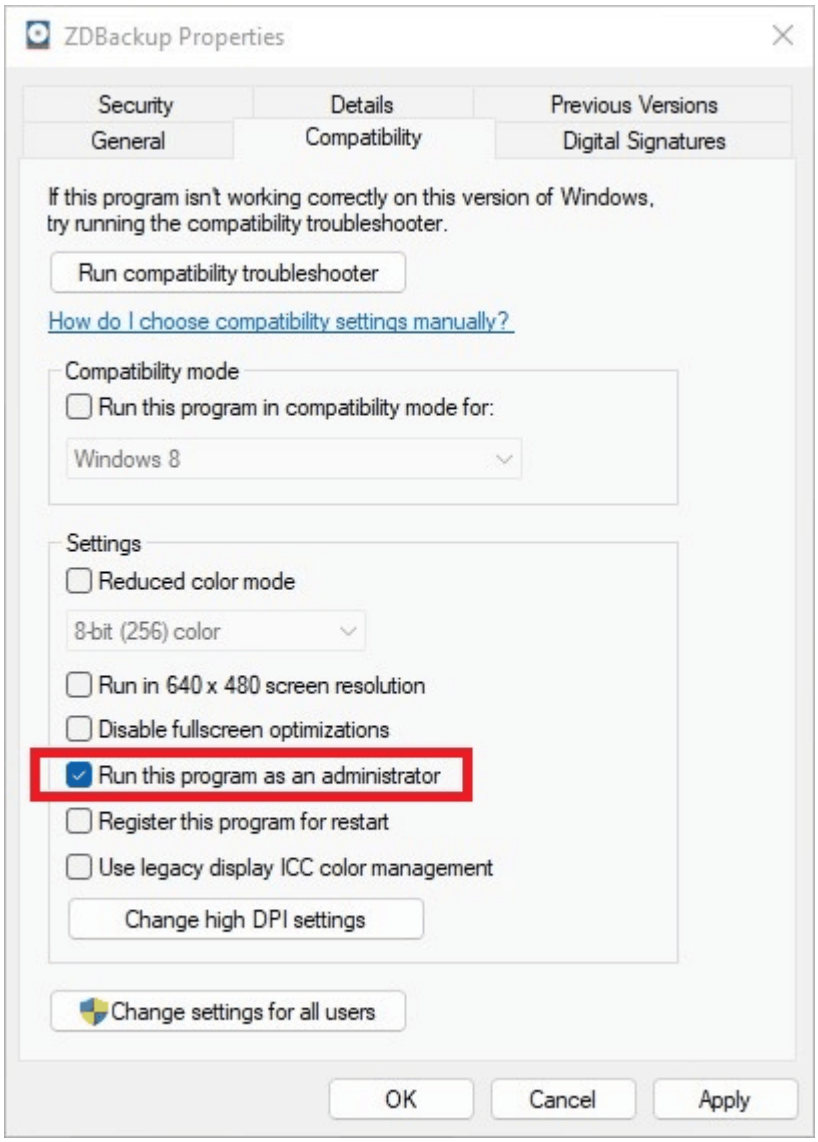
There are two ways to start Z-DBackup with administrator rights:

1. If you on y want to start Z-DBackup with administrator rights once:



- Right-click on the Z-DBackup shortcut in the start menu or on your desktop
- Choose the context menu item "Run as administrator"
- Confirm the security question with "Allow"

2. If you always want to start Z-DBackup with administrator rights:



- Right-click on the Z-DBackup shortcut in the start menu or on your desktop
- Select "Properties" from the context menu
- Go to the tab "Compatibility"
- Check the box next to "Run program as administrator"
- Confirm the dialog with OK

Scheduled backups with Z-Cron

If the backup is started on schedule by Z-Cron, Z-DBackup gets the required user rights from the Z-Cron system service!

1.6.9. Target Drive

The target directory for a backup should be a local hard drive, network drive or removable medium.

⚠ **The root directory of the system drive (usually C:) may in no case be the target directory for backups! This may result in accidental loss of data, e.g. by overwriting system files!**

If your computer only has one drive, you should always use a subdirectory as a backup target.

1.7. Notes on the Program

1.7.1. What's new?

You can find information about the current version of Z-DBackup online on our IT blog (only in German - with Google Translate).

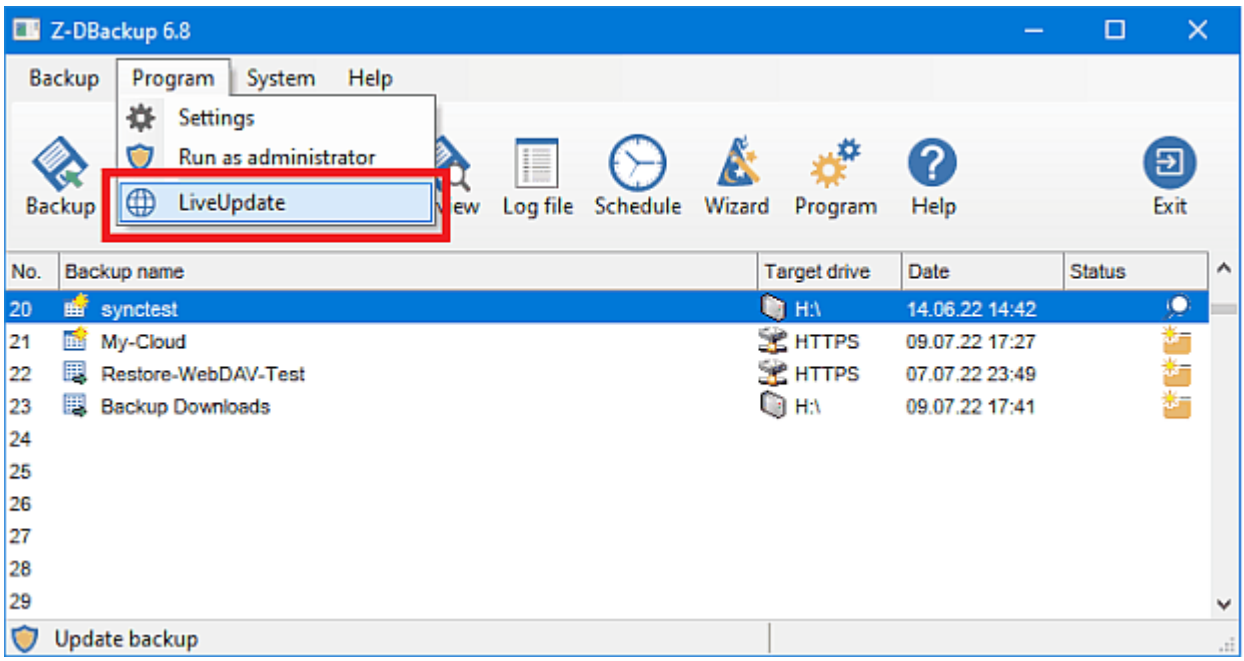
Registered users of Z-DBackup have to install the (free) update to the current version directly via the live update function. An update via our website or a new download would make the installed version the standard (freeware) version again.

Help Z-DBackup

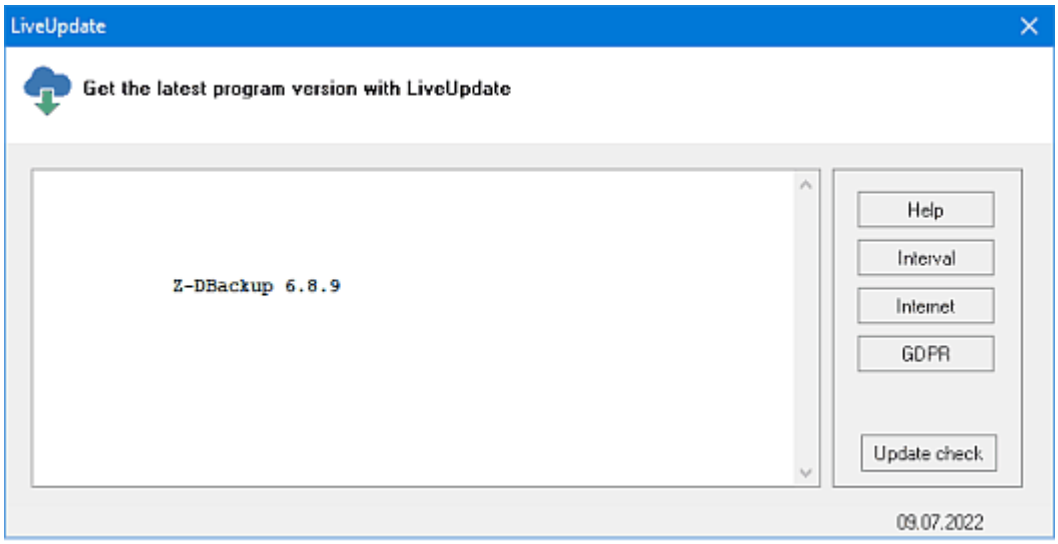
1.7.2. Programm Update

We continually work on our software products to to further develop and optimize them and adjust them to new computer technologies. We also fix software bugs during this process. The LiveUpdate feature allows you to quickly look for updates in regular intervals. When you download an update, the installation will begin automatically.

We recommend to use LiveUpdate regularly, because bugs are fixed in the updates and new features are added to the software.



Registered users of Z-DBackup must use LiveUpdate to install new versions of the software. It is important that you do not manually download a new version from our website, because installing it would downgrade your Z-DataBurn installation to the free standard version.



Help
Opens this help window. You can also press F1.

Interval
Set the time interval for LiveUpdate checks. You can also completely disable the update check.

Internet
Various options regarding the internet connection.

Update Check
With this button, you can check if there is a new version of this software available in the internet. The status bar at the bottom of the window gives you information about possible updates.

Download
If the update check was successful, you can proceed to download the new version. The installation starts automatically after the download is finished.

Help Z-DBackup

1.7.3. Service and Support

General information about the support

We would like to point out that our support is offered within our means voluntarily and free of charge for users of the freeware version. There is no legal entitlement to free service and support for users of the freeware version of Z-DBackup.
Users owning a Z-DBackup licence are entitled to free support via e-mail.

Please understand that the software cannot always please everyone in every way. With more than 35,000 users, we choose the conventionally best way to make our products user friendly. There are some restrictions on some systems that cannot always be taken into account. Thus, individual software components from different software vendors may impair the functionality of our software.

Suggestions for software
In case you find bugs or have other ideas for improvement, please send an email to:

 support@z-dbackup.de

I'm experiencing problems with an application – what should I do?

First, read the online help/user manual. If no help is available, send an email to support@z-dbackup.de with an exact (!!) description of the error. This includes error number, error text, maybe a screenshot, a description how the error occurred (to help us understand what happened) as well as details about your computer configuration (operating system, service packs, particularities, memory, processor etc.). The more precise you are, the quicker we can offer a solution.

Please include the following data with your email/support inquiry:

- Program version
- Operating system/service packs
- detailed error description
- Information on how the error can be reprocudes
- maybe a screenshot

Please zip all email attachments (images, logfiles), because else they might be classified as spam by my email ticketing system, which will delay the support. Please also understand that our reply to your email can be delayed over weekends.

IMU Andreas Baumann
Schönhauser Allee 163
D-10435 Berlin Germany

Hotline: Monday to Friday from 12 AM to 4 PM (Central European Time)

 www.z-dbackup.de

Help Z-DBackup

- Notes on the Program
  - What's new?
  - Add-On Modules
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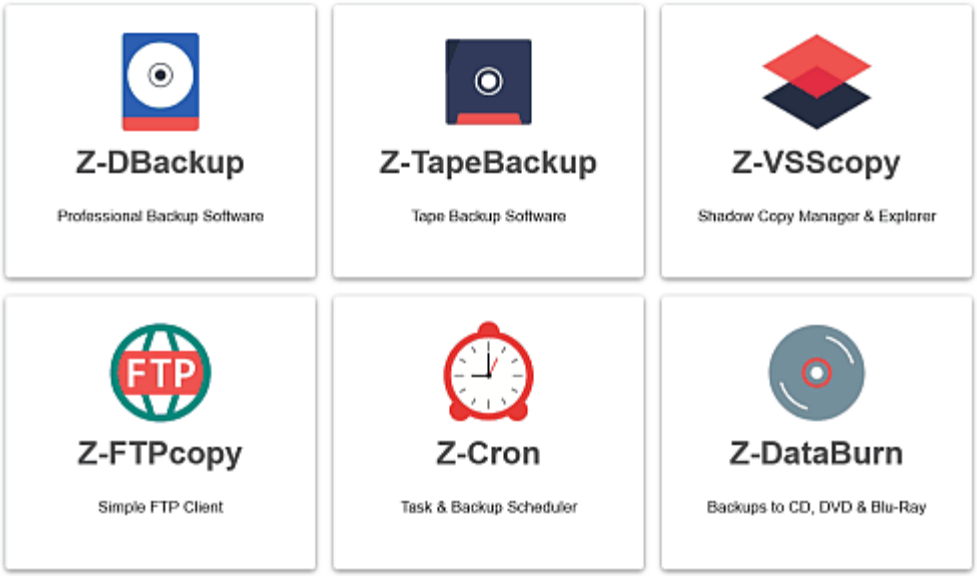
1.7.4. Programm Description

Z-DBackup is an effective backup system for Windows, which backs up data to any target drive easily, quickly and reliably. It can be used for data synchronization and archiving. In addition to 1:1 copies or compressed and encrypted backup archives, Windows system backups can also be created easily and reliably.

Network capability makes Z-DBackup the ideal backup tool for private and commercial use. Our additional modules also enable backup in the cloud or tape backups on LTO drives.

The data backup concept of Z-DBackup is structured in such a way that special tasks are carried out by additional modules. All software components are designed in such a way that each module can be used individually, but they all work together seamlessly.



This keeps the price for your data backup low, because as a user you only have to buy the modules that you need for your individual backup.

Z-DBackup is controlled via backup sets. For each backup set, you can set which files and directories should be taken into account, password protection or whether the data should be saved in compressed form. These settings are saved, i.e. data backup with one mouse click!

Z-DBackup can back up to all drives that can be addressed via a drive letter. In the case of exchangeable media (REV, RDX, or flash disks), the backup is carried out on several media one after the other, depending on the size. The program is network-enabled and can back up to and from network drives.

Z-DBackup can use any drive that is accessible with a normal drive letter as a target drive for a backup. If a removable medium is selected, the program can use multiple mediums for one backup, depending on the size of the data. The program is network-enabled and can copy data to and from network drives.

With the add-on module Z-TapeBackup you can also copy backup archives to tape drives such as TRAVAN, VXA, SLR, MLR, DLT, QIC, DAT, AIT, DDS and LTO.

With the add-on module Z-DataBurn you can also burn backup archives to CD-R, DVD. Blu-Ray or M-Disk.

Archive format
The archives are not created in unknown, cryptic formats. The Z-DBackup archive format is compatible to PKZIP 8.0, SecureZIP 8.0 and WinZip from version 9.0. This ensures a direct, quick and reliable access to the backup files (even without Z-DBackup).

1:1 file copies
in addition to the creation of compressed backup archives (with optional 256 bit AES encryption in the professional version), Z-DBackup can also create 1:1 file copies of directories and drives.

Features of the program versions
Even the freeware version of Z-DBackup offers a wide range of options and settings and is an ideal backup tool for the ambitious home user.

Features of the freeware and licence version of Z-DBackup

All statements on my web sites or in the program documentations or help files regarding the range of features of Z-DBackup are only general information and no guaranteed properties.

Freeware version
The standard version of Z-DBackup is freeware for personal use, i.e. can be used for private purposes free of charge.

On a Windows Server operating system, the freeware version of Z-DBackup is limited to a trial period of 14 days. The purchase of a Z-DBackup server license is required for extended use on a Windows Server platform.

Without the add-on module Z-VSScopy, Z-DBackup cannot save open or locked files that are currently in use by other applications!

Help Z-DBackup

- Notes on the Program
  - What's new?
  - Add-On Modules
  - Programm Update
  - Service and Support
  - Programm Description
    - Features Overview
  - License Terms and Conditions
  - Registration Form
  - Data Protection Declaration

1.7.4.1. Features Overview

Features	Freeware Version	Licensed Version
Backup sets	20	250
1:1 file copies	●	●
Maximum number of files per backup set (1:1 file copy)	250.000	no limit*
Maximum total file size per backup set (1:1 file copy)	1 TB	no limit*
Supported path length	up to 32767 characters	up to 32767 characters
Backup archive	**Freeware Version**	**Licensed Version**
Maximum number of files per backup set (ZIP archive)	up to 250.000	up to 500.000*
Maximum number of files per backup set (ZDB archive)	up to 250.000	up to 1.000.000*
Maximum total file size per backup set (ZIP/ZDB archive)	1 TB	no limit*
ZIP format	PKZIP 4.05 - 64 Bit	PKZIP 4.05 - 64 Bit
Deflate compression	●	●
Deflate64 compression		●
Backup-Archiv standard encryption	●	●
Backup-Archiv 256-Bit AES encryption		●
Check the functionality of created backup archives	manually	automatically
Multi-Spanning	up to 1 GB	up to 4, 12, 24 GByte
Self-extracting backup archives (SFX)	up to 2 GByte	up to 2 GByte
Network	**Freeware Version**	**Licensed Version**
Network-enabled	●	●
Handles UNC paths	●	●
connect/disconnect network drive	●	●
System	**Freeware Version**	**Licensed Version**
Supports Windows Servers 2019, 2016, 2012 (R2), SBS, 2008 (R2),		Z-DBackup Server
System image backup	●	●
Disk-Image- and bare-metal-recovery	●	●
Virus self test	●	●
Features	**Freeware Version**	**Licensed Version**
Link backup sets		●
Auto Shutdown	●	●
E-mail notification (SMTP)	●	●
Send backups archives as e-mail attachments		●
Registry Backup		●

Scheduling and automation	Using Z-Cron or Windows scheduler	Using Z-Cron or Windows scheduler
Automatically run external programs before/after backup	●	●
Start batch or Visual Basic scripts before/after backup	●	●
Start/stop system services (e.g. SQL-Server) before/after backup	●	●
Filter inklusive	●	●
Filter exklusive	●	●
Restoration in update or synchronization mode	●	●
Incremental backup	●	●
Differential backup	●	●
Backup open or locked files	with Z-VSScopy	with Z-VSScopy
Directory synchronization (Refresh and synchronization mode)	●	●
Version backup (Cron backup)	●	●
Outlook 2000/XP/2003/2007/2010/2013 Backup	●	●
Automatical data verification (1:1 comparison)		●
Backup of hidden and system files	●	●
Backup medium	**Freeware Version**	**Licensed Version**
Backup to USB Stick	●	●
Backup to Iomega® REV	●	●
Backup to RDX-drives	●	●
Backup to CD-R/DVD/Blu-Ray	with Z-DataBurn	with Z-DataBurn
Backup to FTP-Server FTP/FTPS	with Z-FTPcopy	with Z-FTPcopy
Multi-Spanning of backups on hard disks	●	●
Multi-Spanning of backups on CD/DVD/Blu-Ray	up to 4 CDs	●
Tape backup	**Freeware Version**	**Licensed Version**
Tape backup to all tape drives (DAT, DLT, LTO ...)	with Z-TapeBackup	with Z-TapeBackup
Multi-Spanning on tapes		●
License and Use	**Freeware Version**	**Licensed Version**
Commercial and business use of our software		●
Entitlement to free e-mail support		●
*option or limit depends on the used hardware and operating system		

All statements on my web site or in the attached program documentations regarding the range of features of our software are only general information and no guaranteed properties.

Feeware Version
The standard version of Z-DBackup is freeware for personal use, i.e. it may be used by private persons free of charge.

Help Z-DBackup

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  - Service and Support

- Programm Description
- License Terms and Conditions
- Registration Form
- Data Protection Declaration

All used trademarks and company names are subject to copyright of their respective companies.

1.7.5. License Terms and Conditions

Freeware for personal use
Most of the programs offered here are freeware for personal use, i.e. they can be used free of charge in the standard version by private persons. The commercial or professional use of the free versions is not allowed.

Shareware
In principle, these programs are 14 day trial versions for professional users. After expiry of the trial period, the software may not be used any more! If you want to continue to use the program, you must buy a license.

This software is distributed on the following terms of use:

The computer programs of A. Baumann, the program descriptions and instruction manuals, are object of the contract. These also are described as "software" in the following.

I wish to inform you that in the current state of the art it is impossible to create computer software in a way so that it will run error-free in all possible combinations and environments. The subject of this contract is therefore only a software which is generally useful as noted in of the program descriptions and user manuals. All statements on my web site or in the attached program documentations regarding the range of features of our software are only general information and no guaranteed properties.

- The software is provided without any warranties.

- The author Andreas Baumann cannot be held liable for any damages resulting from the use of this software or impossibility to use this software by the user or third parties.
  In no case can the author be made responsible for any loss of profit or revenue or the loss of data or any direct, indirect, special, consequential, incidental or inclusive damages caused by the use of the software or the impossibility to use the software, independently of a theoretically applicable possible liability, even if the possibility of such damages has been brought to the author's attention.

- The standard version of the software is free to use for private persons. The commercial or professional use of the free versions is not allowed.

- The free standard version of the software can be used for evaluation purposes in businesses.

- For professional/business use you must acquire a license from the author to use the software.
  Professional use of the free version infringes applicable copyrights and can be prosecuted according to civil and criminal law.

- Commercial or professional use or distribution in any form requires my written consent.

- Changes to the software or its documentation or any form of decompilation are forbidden.

- A user is not legally entitled to demand free support for the software. However, we are always trying to help our users to the best of our abilities and provide qualified e-mail support.

- We are not required to publish free updates to our software. However, we try to fix every bug as soon as possible as well as introduce new features and provide updates.

- The licence fee contains one free new key in case you lose your old one during the first 12 months after

buying our software. After that, we charge a processing fee for issuing a new key.

- Should any of the provisions of this contract be or become invalid, the validity of the remaining provisions is not affected. The provision in question must be replaced by a valid provision which is as near as possible to the desired purpose.

- The general terms and conditions by Andreas Baumann apply. Terms and conditions of the customer do not apply. Andreas Baumann explicitly contradicts their inclusion as far as no individual inclusion was agreed upon between the parties.

Andreas Baumann
IMU Hard- und Softwareservice
Schönhauser Allee 163, D-D-10435 Berlin
Germany

Tel.: +49 (0)1590 6510302

Help Z-DBackup

1.7.6. Registration Form

Information on Z-Software Orders
You need an internet connection to order our software.

Privacy Policy and Terms

Thank you for your interest in our company and our products and services. You can be assured that your personal data is safe with us and that we take the protection of your personal data very seriously. Complete compliance with the regulations of the Bundesdatenschutzgesetz (Federal Data Protection Act) is a matter of course for us.

Private Data Protection Statement

Terms of license for Software

Order by Share*it!
You can order our software directly via the Order Now button. The transaction is then handled by our e-commerce partner Share-It!

Payment: 

Program	Version	Language	Single license	Info
Z-DBackup	Professional		Order Now	
Z-DBackup	Server		Order Now	
Z-VSScopy	Workst./Server		Order Now	
Z-Cron	Workstation		Order Now	
Z-Cron	Server		Order Now	
Z-TapeBackup	Professional		Order Now	
Z-TapeBackup	Server		Order Now	
Z-TapeLoader	Workst./Server		Order Now	

Z-DataBurn	Workst./Server		Order Now
Z-FTPcopy	Workst./Server		Order Now
Z-Scan2Send	Workst./Server		Order Now

Software Bundles with Z-VSScopy for Windows 11, 10, 8, 7 and Windows Server 2022, 2019, 2016, 2012 (R2), SBS, 2008 (R2)

Z-DBackup Compact Z-DBackup / Z-VSScopy / Z-Cron	Workstation		Order Now
Z-DBackup Compact Tape Z-DBackup / Z-VSScopy / Z-TapeBackup	Workstation		Order Now
Z-DBackup Compact Tape Z-DBackup / Z-VSScopy / Z-TapeBackup	Server		Order Now
Z-DBackup Server Complete Z-DBackup / Z-VSScopy / Z-Cron / Z-TapeBackup	Server		Order Now
Z-DBackup TapeLibrary Z-DBackup / Z-TapeBackup / Z-TapeLoader	Server		Order Now
Z-DBackup Server Complete Library Z-DBackup / Z-VSScopy / Z-Cron / Z-TapeBackup / Z-TapeLoader	Server		Order Now

Help Z-DBackup

1.7.7. Data Protection Declaration

1) Information on the Collection of Personal Data and Contact Details of the Controller

1.1 In the following, we inform you about the handling of your personal data when using our Newsfeed and LiveUpdate. Personal data is all data with which you can be personally identified.

1.2 The controller in charge for data processing on this software within the meaning of the General Data Protection Regulation (GDPR) is Andreas Baumann, IMU Hard- und Softwareservice, Saalmannstr.9, D-10435 Berlin, Germany, Tel.: +49 (0)1590 6510302, E-Mail: service@z-dbackup.de. The controller in charge of the processing of personal data is the natural or legal person who alone or jointly with others determines the purposes and means of the processing of personal data.

1.3 The LiveUpdate feature uses SSL or TLS encryption for security and to protect the transfer of personal information and other sensitive content (such as license information)..

2) Data collection when using the LiveUpdate and Newsfeed functions in our Z-Software

If you use the LiveUpdate feature in our software, we collect the following data that is technically necessary for us to offer you this service::

- Program name, version and serial no. of software
- Date and time of access
- Mount of data sent in bytes
- Used operating system
- Used IP address
- Your license data - LiveUpdate registered users

Data processing is carried out in accordance with Art. 6 (1) point f GDPR on the basis of our legitimate interest in improving the stability and functionality of our software and the LiveUpdate function. The data will not be passed on or used in any other way. However, we reserve the right to check the server log files subsequently, if there are any concrete indications of illegal use.

3) Cookies

If personal data are also processed by individual cookies set by us, the processing is carried out in accordance with Art. 6 (1) point b GDPR either for the execution of the contract or in accordance with Art. 6 (1) point f GDPR to safeguard our legitimate interests in the best possible functionality of the LiveUpdate and Newsfeed and a customer-friendly and effective design of the page visit.

4) Contacting

IIn the context of contacting us (e.g. via contact form or e-mail), personal data is collected. Which data is collected in the case of a contact form can be seen from the respective contact form. These data are stored and used exclusively for the purpose of responding to your request or for establishing contact and for the associated technical administration. The legal basis for processing data is our legitimate interest in responding to your request in accordance with Art. 6 (1) point f GDPR. If your contact is aimed at concluding a contract, the additional legal basis for the processing is Art. 6 (1) point b GDPR. Your data will be deleted after final processing of your enquiry; this is the case if it can be inferred from the circumstances that the facts in question have been finally clarified, provided that there are no legal storage obligations to the contrary.

5) Rights of the Data Subject

5.1

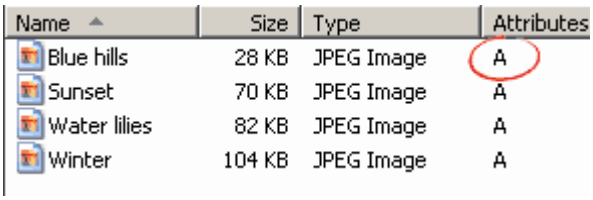
The applicable data protection law grants you comprehensive rights of data subjects (rights of information and intervention) vis-à-vis the data controller with regard to the processing of your personal data, about which we inform you below :

- Right of access by the data subject pursuant to Art. 15 GDPR
- Right to rectification pursuant to Art. 16 GDPR
- Right to erase ("right to be forgotten") pursuant to Art. 17 GDPR

1.8. Technical Terms Glossary

1.8.1. Archive Flag

DOS and Windows keep a so-called archive bit for each file, which acts like a warning flag. If a file is saved during a backup, the archive bit is cleared, the flag is put down, so to speak. As soon as you make a change to this file on the hard disk, the archive bit is set again. The operating system puts up a red flag which signals: *Attention – this file was changed and should be backed up again!*



Windows automatically sets the archive bit on every change to a file, complete overwriting (Save as …) and file creation.

Backup strategies and the archive attribute

The archive bit is treated differently depending on the backup strategy.

- At a **copy backup**, e.g. burning data to a CD/DVD for backup purposes or copying data to an external hard drive, the archive attribute usually remains unchanged.
- The **full backup** saves all files, no matter what their attributes are, and clears the archive bit.
- The **differential backup** saves all files that have changed since the last full backup and thus have their archive bit set. The archive bit remains set.
- The **incremental backup** saves all files that have changed since the last incremental or full backup and thus have their archive bit set. The archive bit is then cleared.

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1.8.2. DEP

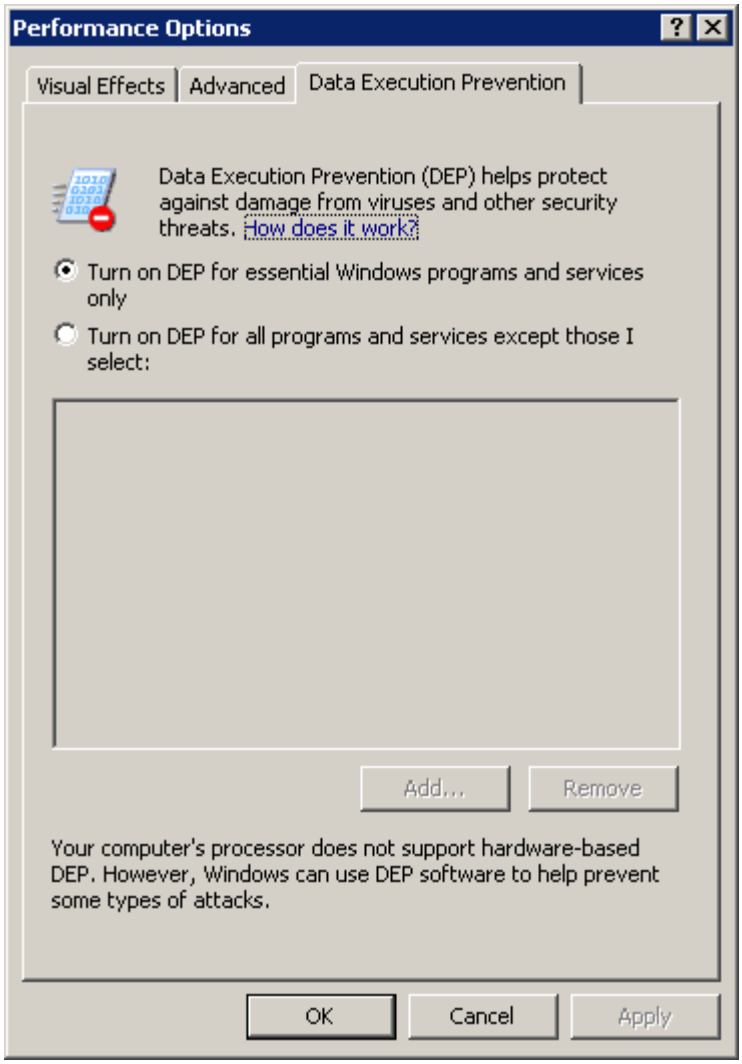
Z-DBackup and Data Execution Prevention (Windows Server)

The Data Execution Prevention (DEP) is a security feature of Windows for monitoring programs while they are running, but may in some cases lead to valid programs being closed. If the activation of Z-DBackup quits prematurely and without an error message, you should remove the program from the DEP and repeat the activation.

Windows 2000 and later:
 Start the control panel, go to "System" and select the "Advanced" tab. There, click the button "Settings..." in the group "Performance". In the new window, go to the tab "Data Execution Prevention".

Windows Vista and later:

 Start "System" from the Control Panel and select "Advanced system settings" from the menu on the left. Click on the tab "Advanced" and then on "Settings..." in the group "Performance". In the new window, go to the tab "Data Execution Prevention".



Then, select "Turn on DEP for essential Windows programs and services only" and click OK.

1.8.3. UDF

UDF – Universal Disk Format

The Universal Disk Format (UDF) is a platform-independent file system developed by the Optical Storage Technology Association (OSTA) that is used primarily for DVDs and is supposed to replace the ISO 9660 format. It was itself standardized as ISO 13346 and is also known as ECMA-167.

It is much less restrictive, compared to ISO 9660:

- File names can be up to 255 characters long which can be chosen from a set of 64000 possible characters (compare: ISO 9660 level 1 allows 8 characters for the file name plus 3 for the extension; ISO 9660 level 2 allows up to 31 ISO characters, Joliet (only Windows/OS/2/Unix): up to 64 unicode characters).
- No restrictions on the directory depth to 8 levels, maximum path length: 1,023 characters
- Support for 8 and 16 bit character sets
- Distinction between uppercase and lowercase in filenames
- Stores the file attributes of various operating systems
- **Expansion of the potential size of the file system into the terabyte range, thus lifting the maximum size of 2 gigabytes**
- **Optimizations for writing DVD-R/DVD-RW and DVD-RAM**

Compatibility of UDF mediums to ISO 9660 can be achieved with DVD MicroUDF with a ISO 9660 level 3 layer; the resulting UDF/ISO bridge disc can the be identified as either a UDF or ISO medium depending on the installed drivers. This even enables Windows 95 to read a UDF disc. All newer Windows versions already support reading native UDF. Linux has already been supporting reading and writing UDF discs for many years.

The UDF format additionaly offers support for packet writing. This makes it possible to use a recordable optical medium just like a removable hard drive or USB stick. UDF packet writing is currently supported by almost all operating systems; a prominent exception is Windows XP, for which additional software must be installed.

Sometimes, OEM DVD-RAM drives are missing a UDF driver. If this is the case, a suitable UDF driver must be downloaded from the internet.

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1.8.4. UNC

UNC – Universal Naming Convention

UNC is short for Universal Naming Convention and is a standard system for naming network drives. Via a UNC path, any resource in a network can be accessed directly withouth a drive letter mapping. In computer networks which use

the internet protocol TCP/IP for data transfers, it is also possible to use the IP adress of a computer instead of its name in a UNC path. An example for a valid name of a shared network resource is

Syntax: \\Computer\Resource

The UNC name of a directory or file can also include the path after the resource name, like this:

Syntax: \\Computer\Resource\Directory\File

UNC path: **\\Servername\Resource\Path**	
\\	Double backslash
Servername	Name of the computer that contains the resource (drive, directory)
Resource	In Windows, you need a shared resource to access data on another computer
Path	This is optional

In addition to the UNC path, the user name and password, you will usually also need to specify access permissions defining which users can access the resource. This is done with user accounts on the source and the target computer.

 While Windows does not discriminate between upper and lower case letters in file and directory names, UNIX and Linux do so.

 The passwords stored by Z-DBackup can contain up to 32 characters. Allowed characters are: ***0-9, a-z, A-Z*** and the symbols _ ***! % / & ( ) ? . - ; + :*** @ **** # [ ] { } € § | ~ = $ "*** (no spaces). Please note these restrictions when creating the backup user accounts on your network computers.

1.8.5. ZIP

ZIP Format

The ZIP file container format is an open archive format for compressed or uncompressed data. These archives usually have the file name extension .zip. The file format and the compression technique "Deflate" are in the public domain and have therefore gained a world-wide distribution and significance.

ZIP file format
There are a few ZIP format versions: e.g PKZIP 2.04g (1994), and PKZIP 4.5 (2001). Both have been developed by the inventor of the ZIP compression, PKWARE (Phil Katz). Other software manufacturers make use of this format, e.g. the well-known program WinZip.

Z-DBackup uses the newer ZIP format 4.5, which has almost no restriction for the number of files or archive size (ca. 2^{64} files and 2^{64} bytes per file). Z-DBackup supports archives with up to 500,000 or 1,000,000 files depending on the settings (350,000 files when the backup method **ZIP file format** is set).

Our own format **ZDB+** supports up to 1,000,000 files. This file format still uses the ZIP container format to store data

but extends the standard ZIP format with own features and is thus not compatible to most ZIP programs.

 Some freeware ZIP programs and older WinZip versions (before version 9) can only use the old ZIP format 2.04g and are therefore not compatible to the Z-DBackup professional version.

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