



Personal Backup Version 6

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Contents

- Overview
 - Installation and update
 - First steps
 - Control panel
 - Program preferences
 - Backup tasks
 - Editing a backup task
 - Adding directories
 - Selection of directories and files
 - Task settings
 - Other options
 - Regular expressions
 - Log file
 - Performing backups
 - Running a backup manually
 - Using Desktop shortcuts
 - Time-controlled automatic backups
 - Automatic backups using Windows Task Scheduler
 - Personal Backup in the Windows notification area
 - Restore data from backup
 - Creating and editing restore tasks
 - Restoring single files and files from zip archives
 - Tools
 - Verification of backed up files
 - Creating and editing verify tasks
 - Clean up a backup directory
 - Creating and editing clean-up tasks
 - Command line options
 - Keyboard shortcuts
 - Utility programs and tips
 - Alternating backups using Windows Task Scheduler
 - Start Backup under different account
 - Backup of Thunderbird data
 - Real-time backup of data
 - Tutorials for special problems
 - Notes on current version
 - Appendix
-

J. Rathlev, 24222 Schwentimental, Germany, January 2020



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Overview



Personal Backup is a program for **saving personal data** to any destination folder. This folder may be located on a local fixed or removable drive, on a Windows network server or on an FTP server. The 32-bit version runs under **Windows 7, 8 and 10 (32- & 64-bit), Windows Vista, Windows XP, Windows Windows Server 2003/2008/2012**, the 64-bit only under **Windows 7, 8 and 10 (64-bit) and Windows Server 2008R2/2012/2016/2019**.

The **selection** of the files to be backed up is made on a by-folder basis. All sub-folders are included automatically, but the user can exclude or include any subdirectories from or in the backup by selection or by filter. Additional criteria are selection by file type, file age and/or file name filter.

Within the destination folder, the original drives (C:, D:, etc.) appear as subdirectories named *DrvC*, *DrvD*, etc. The **original directory structure** remains unchanged beneath these folders. Optionally all data can be compressed and/or AES algorithm-encrypted.

You can **create** and **save as a file** as many backup tasks as you wish. Performing the backup can be done manually or **automatically using a time schedule**. The program offers several options for this: on logon, on logoff or at a fixed time of day on selected days of the week. Alternatively, it is easy to start a backup using **Windows Task Scheduler** for individual schedules. The configuration can be made using the program internal wizard. In addition it is possible to call a **one-click backup** of a directory with all its files and subdirectories using the Windows Explorer context menu. The destination directory and the other settings (backup mode, compression, encryption, etc.) will be taken from a selectable task (**the default task**).

By default during the backup the program checks whether the file to be saved is newer than one already backed up. Only files with newer timestamps and, of course, files not yet have been backed up are saved. An alternate criteria is the archive bit of the files.

In addition there are functions to **verify** and **restore** backed-up data and to **delete** selected files and directories. The program offers full Unicode support for desktop and file copying. This overcomes the ANSI (ISO-8859) filename limitations on copying files. Additionally, path-lengths may be longer than 260 characters.

Note: Personal Backup **cannot be used to save and restore system files**.

The functions in detail:

- Control panel with summary of the user's backup tasks and associated time schedules
- Wizard for the creation of new backup tasks
- Unlimited number of configurable backup tasks
- Backup of complete directory structures
- Function to backup selected single files
- Start backup on demand or run automatically using a time schedule
- One-click backups of directories via the Windows Explorer context menu
- Backup via FTP (optionally with proxy and FTPS (FTP over SSL))
- Backup options:
 - Backup as separate files:
 - All files will be copied either unchanged (1:1) or with data compression (**gzip** or **zip**).
 - Files are backed up using the original directory structure and a drive identifier (default mode)
 - do. using the original directory structure, but without drive identifier
 - do. separated by root directory
 - do. into one folder without root directory
 - Backup as **zip** archive:
 - Optionally a maximum size can be specified for zip archives. In this case they will be split into separate files of appropriate size.
 - One zip file (files > 4 GB supported)
 - do. per root directory

- do. per subdirectory without drive identifier
 - do. per subdirectory with drive identifier
- User-definable list of file types not be compressed (e.g. for files that are themselves compressed, such as *pdf, jpg, docx, odt*)
- Integrated function to use **Volume Shadow Copies (VSS)** on backup
- Placeholders for date, etc. in target directory name and zip filename
- Many choices for files and directories:
 - Include or exclude selected subdirectories
 - Filter settings for filenames (optionally regular expressions), file attributes, file age and file size
 - Selection of file types: manually or using a filter mask, display for file types with sorting by name, count or size
- File preview to check filter settings
- Optional encryption using AES (zip-compatible)
- Adjustable time gap for timestamp comparison
- Running of external programs or scripts before and after backup
- Optional synchronization of backup directories with source directories (alternatively before or after backup) using one of three modes
- Optional creation of security copies: retain an adjustable number of previous versions of the backed-up files with selectable maximum age
- Optional copy and restore of alternate data streams and document summaries (both only NTFS) as well as permissions (only NTFS and network)
- Optional backup and restore of junctions (only NTFS)
- Optional password protection when overwriting task file
- Optional mail delivery after an action (e.g. backup) with status report and attached log (also TLS)
- Optional log file of all actions (e.g. backup and restore) with printout
- Optional log of FTP and SMTP communication to debug connection issues
- Function for deleting old log files
- Creation of desktop shortcuts to start selected backups easily, optionally with subsequent shutdown, log off or hibernation
- Up to 16 internal time controlled automatic backups:
 - Always on logon
 - Once per day on the first logon
 - Once on selectable days of the week at a specified time
 - Always on logoff (or shutdown) after a specified time of day
 - On first logon on selectable days of the week
 - On first logoff (or shutdown) on selectable days of the week
 - Several types of alternating backups
- Wizard for using Windows Task Scheduler for backups
- Comprehensive **command line options** to automate actions e.g. using Windows Task Scheduler
- Automatic check for updates on starting the program
- **Restore** of backed-up data
 - using the **internal function**:
 - Restore of complete directory trees
 - backed up as single files
 - backed up as zip files (single or folder-separated)
 - backed up as single files using FTP connection
 - Option to select particular files by filter for filename and/or age
 - Option to select particular files manually in a dialog
 - Automatic decryption on restore
 - using the **extra tool *PbRestore***:
 -

- Restore single selected files (even when compressed and/or encrypted)
- Restore complete directory trees backed up as single files
- Restore files from an alternating schedule backed up as single files
- Restore files from zip archives (even when encrypted)

- **Verification of backed-up files**

- **Deletion of files and/or directories:**

- Selection by filters and/or age
- Synchronize backup directories

Additional tools in the program package

- **TbBackup:** Backup of Thunderbird data
- **PbStarter:** Run backups under a different account as **protection against ransomware**
- **PbPlaner:** Create alternating backup schedules for execution with Windows Task Scheduler
- **PbRestore:** Restore backed-up single files, directories and files from alternating schedules (even compressed and/or encrypted files)
- **PbMon:** Perform real-time backups
- **PbUninstall:** Uninstalls the program with optional deletion of associated user files

Languages

Many European languages are supported. Available in the current version are **German**, **English**, **Dutch**, and **Hungarian**. When starting the program for the first time, the language setting is retrieved automatically from the Windows system and selected if listed above. Otherwise *English* is used as language. The menu item *Preferences Languages* lets you change this setting without any need for the program to be restarted. This setting is applied to subsequent program starts.

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Personal Backup Version 6

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Installation



- **Installing** from Windows setup
- **Updating** the program
- Installing from **zip file**
- Starting the program from a **USB stick**
- **Uninstalling** the program
- Where to find **program settings and logs**

Installation

Personal Backup is distributed as an executable Windows setup file:

32-bit version: *pb-setup-6.x.yyyy.exe* (x.yyyy represents the applicable version). You can install this version of the program under both 32-bit and 64-bit systems. The directory can be selected by the user, but strongly recommended is an installation to the system-dependent **default location**:

Windows XP: *C:\Program Files\Personal Backup 6*

Windows 7/8/10 (32-bit): *C:\Program Files\Personal Backup 6*

If you are using a 64-bit Windows system, consider the different directory:

Windows 7/8/10 (64-bit): *C:\Program Files (x86)\Personal Backup 6*

64-bit version: *pb-setup-x64-6.x.yyyy.exe* (x.yyyy represents the applicable version). This version can only be installed under 64-bit systems. The directory can be selected by the user, but recommended is an installation to the **default location**:

Windows 7/8/10 (64-bit): *C:\Program Files\Personal Backup 6*.

To install the program, administrator rights are required.

In addition to the program itself, the distribution file also contains all available language modules, the relevant help files (*.chm), the libraries and certificates for secure FTP and mail transfer and some addons (**PbRestore**, **PbPlaner**, **PbStarter**, **PbMon** und **TbBackup**).

Optionally, the installation can automatically create file associations for task files (extensions: *bu* for backups, *rsj* for restore, *cuj* for cleanups and *vfi* for verifications), so that double-clicking one of these task files will start the program ([see here for backups](#)).

Additionally you can configure the program to send log entries to Windows Event Viewer during automatic backups. If selected, a restart of Windows is recommended because the event log will not be activated until then. The function of the backup program itself does not require an immediate restart.

For program removal, use the Programs and Features facility in Windows Control Panel or the Uninstall Personal Backup item via the Windows Start menu.

Notes for unattended installation:

Administrators who want to run an automatic unattended installation should use the following parameters in the command line (refer to [InnoSetup documentation](#)):

- Recommended default parameter: */SP- /verysilent /suppressmsgboxes /nocancel /norestart*
- Optional parameter: */log=<Protokoll-Datei>*
- No automatic start of Personal Backup: */norun*
- Run Personal Backup in background: */auto*

Example: *pb-setup-6.x.yyyy.exe /SP- /verysilent /suppressmsgboxes /nocancel /norestart /norun*

Manual update

To update to a new version, just download and execute the current installation file. It will automatically replace all old files in the Personal Backup installation directory with those of the new version.

Checking for updates

Click *Check for update* in the *Help* menu of the program to establish a secure connection to the download server and to check if an update is available. You can download and install it immediately.

Automatic updates

If this option is enabled (default), the program tries to establish a secure connection to the **Personal Backup** download server biweekly to check if an update is available. If so, the user will be asked whether this is to be downloaded:

Yes

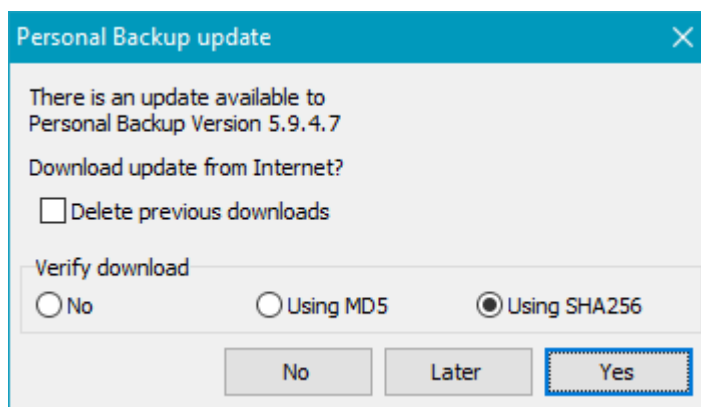
The update to the new version will be downloaded to a selectable location. After this, the user will be prompted to install the update immediately. If so, **Personal Backup** will be terminated and the installation of the updates automatically started.

Later

No further action will be undertaken other than at the next check, the user will be prompted again as to whether the update is to be installed.

No

No update to the given version will be made. The next update prompt will not occur until another, newer update becomes available.



More options

- **Delete previous downloads:** if this option is checked, older program versions will be automatically deleted from the download folder.
- **Verify download:** You can select if either the **MD5**- or the **SHA256** hash algorithm will be used to verify the download. SHA256 is supposed to be the more secure method ([see more](#)).

Note: The automatic update option can be disabled in the **preferences dialog** (*Program start* *Automatic program updates*):

Startup

After installing the program you will find a corresponding entry in the Windows Start menu and, if so selected during installation, a desktop icon.

If the autostart function with time schedule or backup on logoff was selected, you can launch the program by right-clicking the icon in the **Windows notification area** and selecting *Personal Backup*.

Installing from the provided zip file

After downloading, unpack all files from the zip file into any directory. This may for instance also be located on a USB stick ([refer to](#)). The program can be started immediately by double-clicking the file *PersBackup.exe*. Keep in mind that no shortcuts on the desktop or in the Windows start menu will be created. This must be done manually by the user. It is recommended for inexperienced users to use the setup [described above](#) instead.

For **updating** the program, download the current zip file and unpack all files from it to the same directory by overwriting all older files. Due to the user account control since Windows 7 the rights of an **administrator** are required.

Starting the program from a USB flash drive

It is possible to configure **Personal Backup** in such a way that it can be started from a USB stick or drive without leaving traces on the host PC. Copy all files either from the zip file as described above or if the program has been installed in the normal way from the program directory (e.g. *C:\Program Files\Personal Backup 6* to a directory on the USB drive (e.g. *K:\PersBack*). If you now were now to start the program *PersBackup.exe* from there, all program settings, backup tasks and log files would be saved in several subdirectories of the logged on user ([see more](#)). To avoid this, you should start the program using the command line option */portable*. To do so, you can use a batch file or a shortcut containing this line

```
K:\PersBack\PersBackup.exe /portable
```

All program files now will be redirected to the directory on the USB stick from where the program was started.

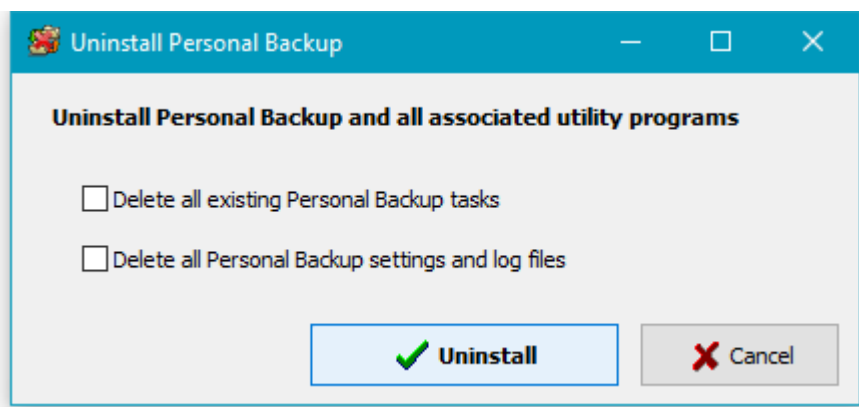
For individual configurations you can use a batch file with some other command line options to start the program: **/ini:[Filename]**, **/taskdir:[Directory]** and **/logdir:[Directory]**. Use a text editor to create such a batch file (e.g. startpb.cmd) in the root directory of the USB drive (e.g. K:\) with the following lines. Please note that when using **placeholders** the enclosing % signs must each be escaped by using a second %.

```
@echo off
echo Start Personal Backup from USB flash drive
start PersBack\PersBackup.exe /i:%%proppath%%\pb.ini /t:%%proppath%%\tasks
/logdir:%%proppath%%\logs"
```

After starting the program for the first time, configure and save your backup task. To use a backup target directory on the USB drive itself, omit the the drive letter from the destination path (e.g. \Backup) or use the volume name of the USB drive ([see here](#)). The latter will also work if the destination path is on another external drive. In doing so, you avoid problems arising from Windows assigning different drive letters.

Uninstalling the program

The best and easiest method of uninstalling the program is to use the *Windows Start Menu - Personal Backup - Uninstall Personal Backup* route. On doing this, you will be offered the option of deleting also all user-created backup tasks, saved program settings and log files prior to uninstalling the program. Removal of the program and the selected user files is then initiated by clicking the Uninstall button.



As an alternative method you can use Uninstall via the Windows Control Panel, but this method offers no way simultaneously to remove the user-created tasks and logs as described above.

Where to find the ini file (program settings) and the log files

All program settings including the configuration of automatic backup tasks are saved in an ini file (*Persbackup.ini*). This is a text file and can be read with any text editor. Editing this file is, however, not recommended.

The ini file and the standard log file (*Persbackup.log*) are located in the user's application data directory (except on starting from a USB stick - see above). You will find this at the following locations:

- **Windows Vista, 7,8 and 10:** C:\Users\<Username>\AppData\Roaming\PersBackup6
- **Windows XP:** C:\Documents and Settings\<Username>\Application Data\PersBackup6

Note: By default this directory is hidden. To make it visible, change the Windows Explorer setting via *Tools Folder Options View Show hidden files and folders*.

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Personal Backup Version 6

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First steps



When starting the program for the first time after installation, it will check if the previous version **Personal Backup 5** is already installed on the computer. If so, all settings and tasks from there will be transferred to **Version 6** and the **Control panel** of the program will open and present the **user's backup tasks** and **associated time schedules** [more information](#).

If **Personal Backup** has just been **installed for the first time**, the user will be prompted to create his/her first backup task ([see below](#)).

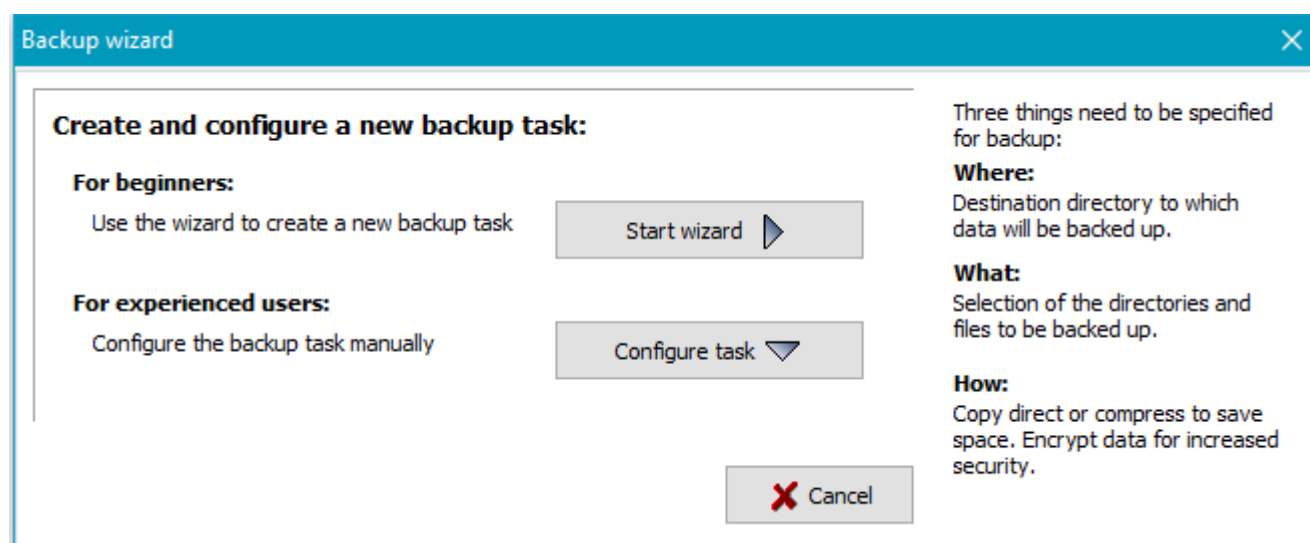
A **backup task** contains information about what to be backed up and how and where the backed-up data shall be stored. The task will be saved as a file using the extension *buj* and can be **started manually** at any time to perform a data backup.

In addition, you can specify **time schedules for automatic data backups**. These settings are made separately from the backup tasks so that it is possible to use more than one time schedule for the same backup, for example at a specified time of day and on logoff.

Another option for starting backups automatically is to use **Windows Task Schedules**. The advantage of this method is that backups can be started even without user login (e.g. on a server).

Creating a new backup task

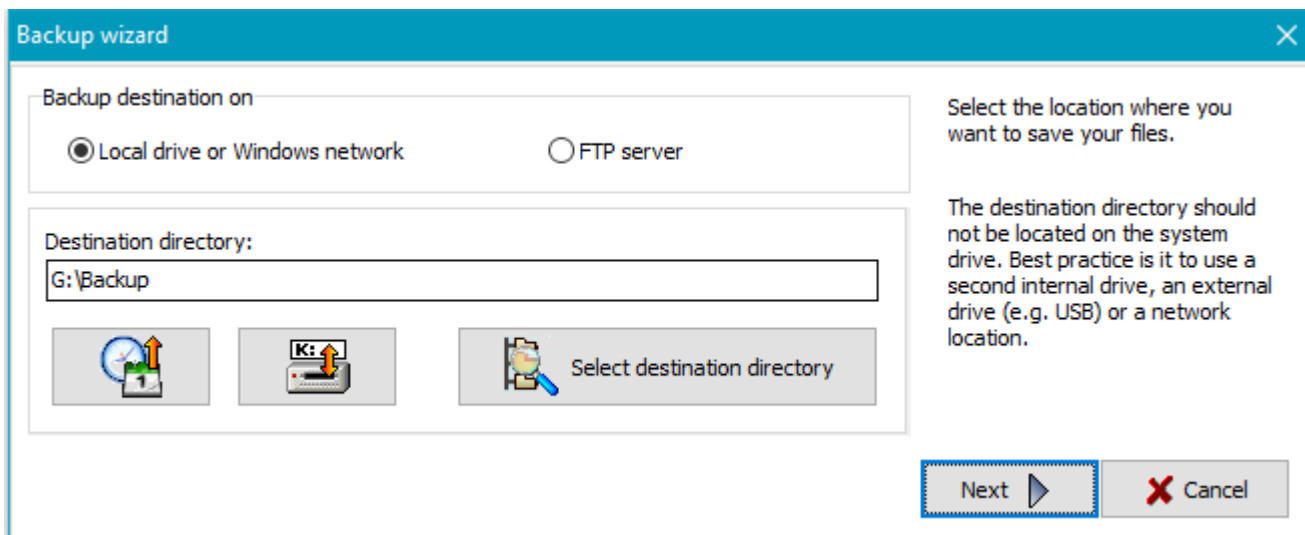
You have the choice to do this using the **wizard** which will lead the less-experienced user through the basic settings ([see below](#)) or to configure the backup **manually** [more information](#).



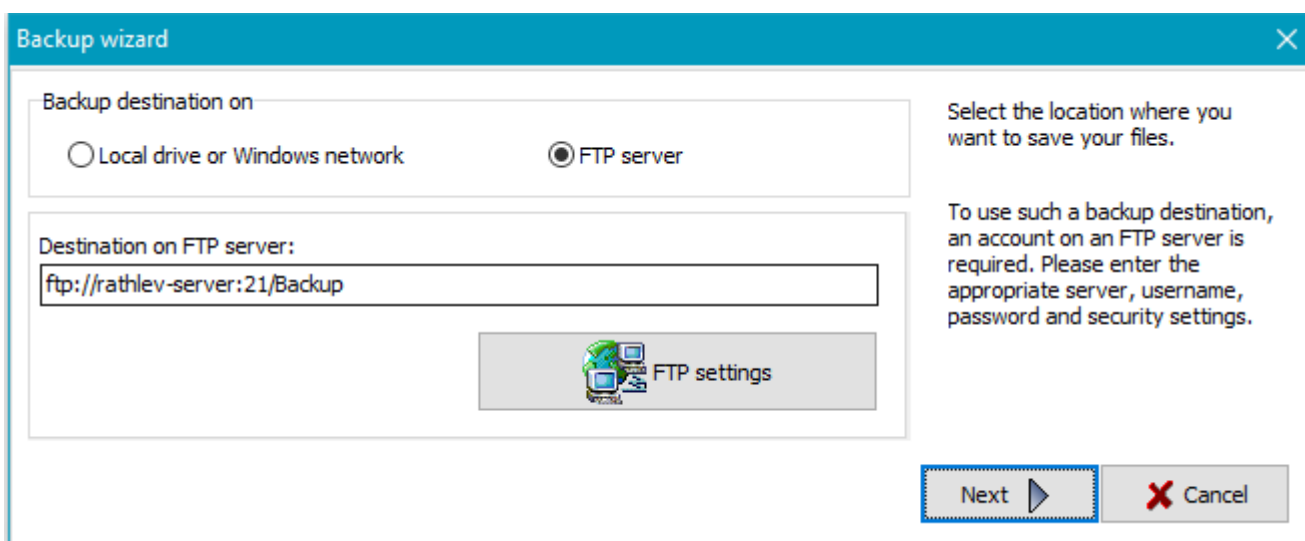
Backup wizard

You have the following choices for the backup destination: on a **local drive or Windows network** or on an **FTP server**.

- If the destination is on a local hard disk, e.g. an external drive connected via USB, or if a network share is to be used, the destination directory can be directly selected by clicking the large button. Later, the files to be backed up will be copied to this location. Using a subdirectory (e.g. *Backup*) is recommended for security reasons. Clicking the button with the drive icon will replace the drive letter of the destination directory by the **volume name**. In addition, you can insert **placeholders** for the date and/or time of backup into the directory name by clicking the leftmost button.



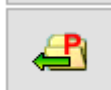
- If a destination on an FTP server is to be used, the required **settings** for the FTP connection must be entered into the dialog that opens after clicking the button.



Next, **select the directories** you wish to back up:



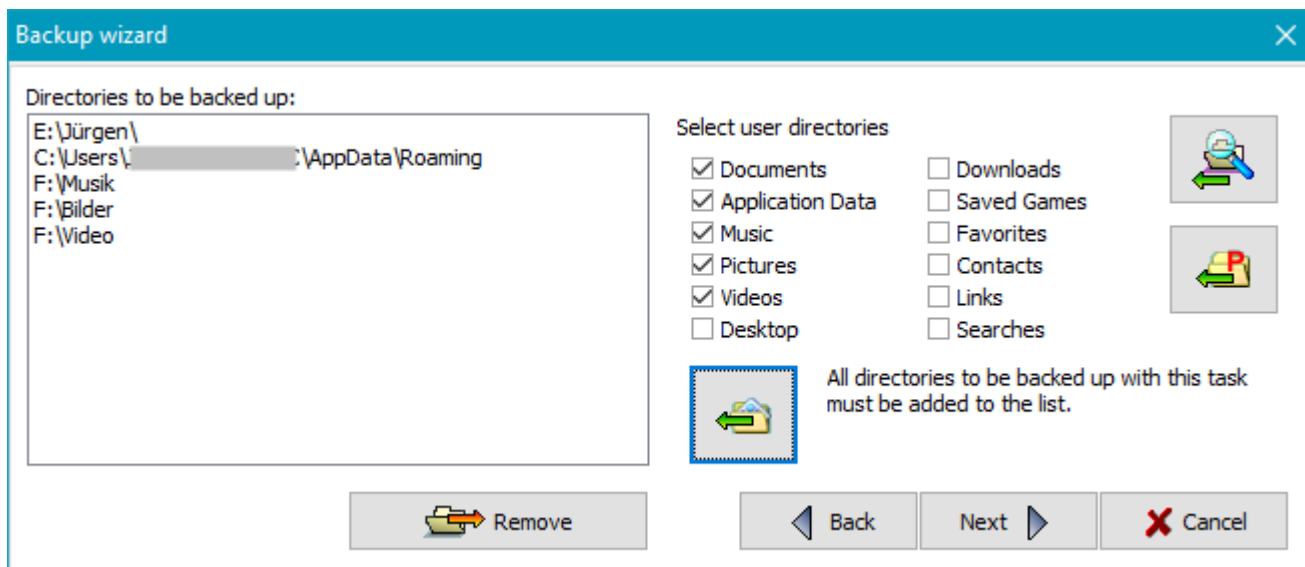
All basic user directories (*Documents, Application Data, Downloads, etc.*) are already preselected and can be added to the list simply by clicking the button.



Some applications (for example *StarMoney*) save their data in the directory **Program Data**. By clicking the button, the desired subdirectory can be selected and added to the list.

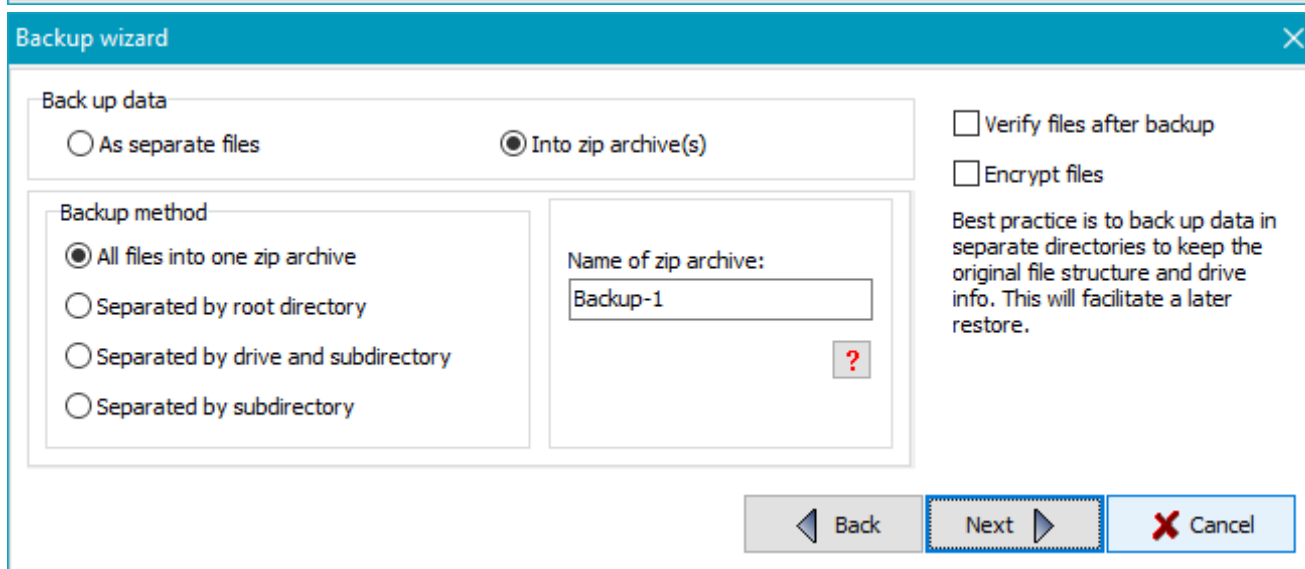
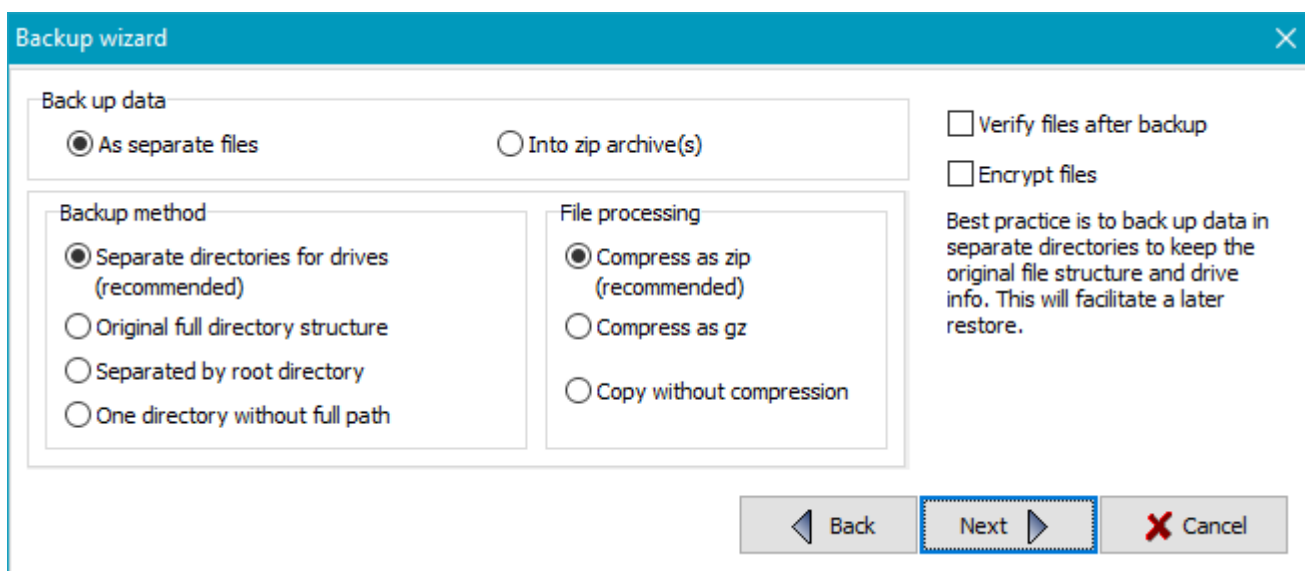


By clicking this button, any other directory can be selected for backup.

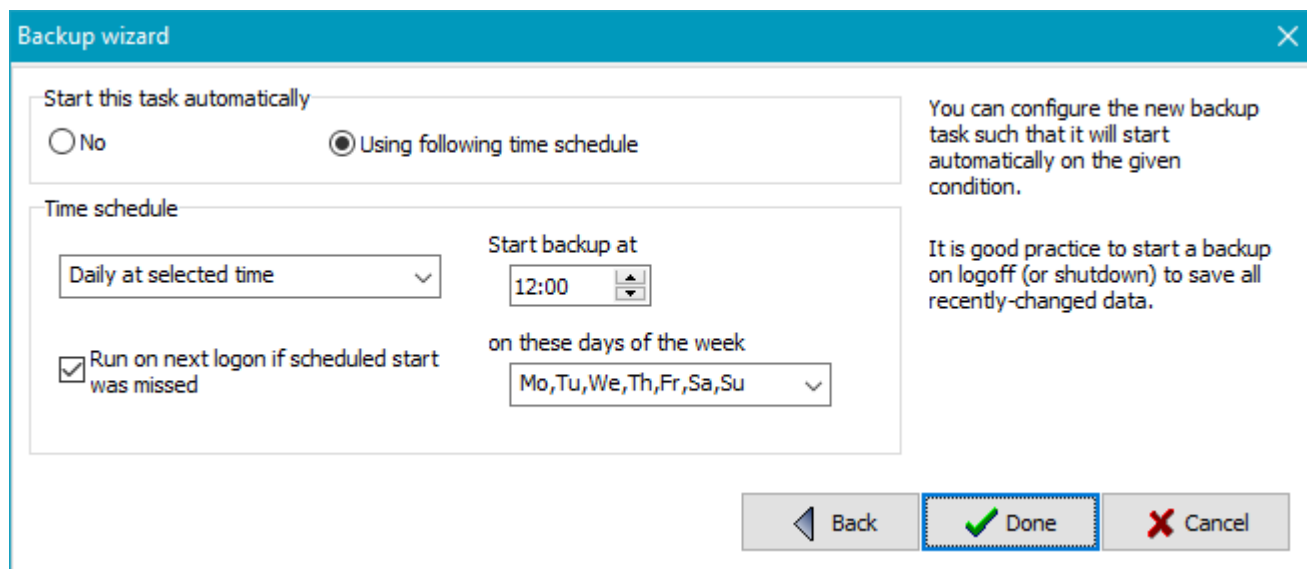


Then select **how the files are to be stored in the destination directory**: as single files using a directory structure true to original or as zip archives. On backing up to single files the user can select if files should be copied with or without **compression**.

In addition you can specify if the files should be **verified** and/or **encrypted** during backup.



Finally, you can specify whether you want to start the new backup automatically under a selection of conditions (**more ..**).



Click the *Done* button to store and complete the new task. The wizard will be closed. To start the new backup, just click the **Start** button.

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Control panel



The control panel is a new feature introduced with **Version 6** and will inform you about all your configured backup tasks and the associated time schedules for automatic backups in a clearly-arranged form. In addition, you can edit time schedules, configure backups using **Windows Task Scheduler** as well as call additional tools for restore and verification of backed-up data and to clean up backup directories.

You can select the desired function by clicking the buttons on the tool panel on the left of the window. On the right, the associated details will be displayed.

- Backups
- Time-controlled automatic backups
- Backups using Windows Task Scheduler
- Additional Tools: Restore, Verification, Delete files
- Close program
- Keep running in background
- Double-click on *buj* files
- Menus
 - Program settings, view log files, etc.
 - Utilities



Backups

All user-configured backups are displayed as a list.

The list **My backup tasks** shows all tasks created by the user. Using the buttons **New** and **Open** (to the left) you can add a **new backup task** or an **already-saved task** to the list. Clicking on a list entry will show the associated details on the right:

- Name of task (highlighted in red)
- To the right small icons are signaling if the files will be
 - compressed, encrypted or compressed and encrypted on backup and if security copies will be created, external programs are to be run before or after the backup and if an e-mail will be sent after backup.
- The icon displays that the task is registered in Windows Task Scheduler.
- Description of task (optional): Double-clicking the text field will open a dialog to edit the description **more information**.
- Task file with full path
- Setting for the backup log

- Destination directory of backups
- Information about the selected backup method
- Information about the associated time schedules (if available)

Placing the mouse cursor over the destination directory field will show a **list of all directories to be backed up** when running the selected task. Clicking the log mode indicator will open a dialog for changing the backup log settings.

Edit list of backup tasks



Create new task: Clicking the **New** button will start the **wizard** for creating a new backup task. This will be inserted as a new entry at the beginning of the list.



Add tasks to list: Clicking the **Open** button will provide access to one or several **backup tasks** already saved as *buj* files to the list.



Edit task: To edit the properties of the selected backup task, click the button at the top right. A **dialog** will open where you can, for example, add other directories for backup or modify the **file selection** or any **other setting**.



Remove all entries from list: Clicking the button will delete all entries from the list. In so doing, only the list entries but not the task files themselves will be deleted. At any time, you can add a saved task file back to the list again by clicking the **Open** button.



Remove selected entries from list: Clicking the button will delete the selected entries from the list. In so doing, only the list entries but not the task files themselves will be deleted. At any time, you can add a saved task file back to the list again by clicking the **Open** button.



Change order: Clicking one of these buttons will move the selected entry or entries (even several) one position up or down. In this way, it is possible to arrange the tasks according to their properties (such as the destination directory).



Insert comments: To improve visibility, you can insert comment lines into the list. In so doing, the arrangements described above can for example be provided with headers.



Sort alphabetically: Clicking this button will sort the whole list alphabetically. Please note that the arrangements described above will be lost.

Time schedules



On the right of the list showing the time schedules associated with the selected task you will find two buttons to configure these. Clicking the upper button will show the details of the selected schedule (here: 2: *On logoff ...*) for editing, whereas clicking the lower button will add a new additional schedule associated with the selected task **more information**.



Other functions



Task scheduler: The selected backup task will be added to **Windows Task Scheduler** to be performed automatically according to the specified time schedule. If this task is already registered, the time schedule can be edited **more information**.



Shortcut: A shortcut on the computer desktop for the currently-selected backup tasks (even several) will be created. By single double-clicking thereon these backups will be started automatically one after another. In addition, you can specify a subsequent action like shutting down the system **more information**.



View log: A **viewer window** will open to show the **log file** belonging to the currently-selected backup task. You can inspect the log and print it if required.



Start backup: Depending on how many backup task are selected in the list, the further procedure is different:

- **One selected task:** The selected backup will be **started instantly**. The Control Panel remains locked until the backup has finished. During backup the user can select an action (e.g. *shutdown*) to be performed after backup (**see here**).
- **Several selected tasks:** All selected backups tasks will be started in background. The Control Panel remains operable so that more backups can be initiated simultaneously, but it is not possible to select a subsequent action (e.g. *shutdown*).



Additional functions (Tools)

This item brings together the functions for restore, verification and cleanup of files which can optionally also be saved as task files. When selecting a particular function, a list of the associated tasks that were created and saved by the user is shown. In addition, similar to the backup tasks (**see above**), the details of the selected task are displayed on the right.

- **Restore files**
- **Verify files**
- **Delete files**
-

[Show log file](#)



Restore files

A summary of all user-configured restore tasks is displayed.

Using the buttons **New** and **Open** (to the left of **My restore tasks**) you can add a **new restore task** or an **already-saved task** to the list. Clicking on a list entry will show the associated details on the right:

- Name of restore task
- Task file with full path
- Directory to which the data was backed-up
- Directory to which the data is to be restored
- Information about file selection

Using the buttons below to the left, you can change the order of the entries and delete selected or all entries from the list. In so doing, only the list entries but not the task files will be deleted. At any time, you can add a saved task file to the list again by clicking the **Open** button.

To edit the selected restore task, click the button at the top right. A **dialog** will open where you can change the settings for this task.

Notes on creating a new restore: When clicking the **New** button, the important settings for the restore, such as backup directory, settings for compression and encryption and the backup method, will be predefined as specified in the **currently selected backup task**. The user need only specify where to restore (to the original or to any other directory), if all files or only those of a specified age are concerned and if files already existing shall be overwritten. You will find more information in the **detailed description**.

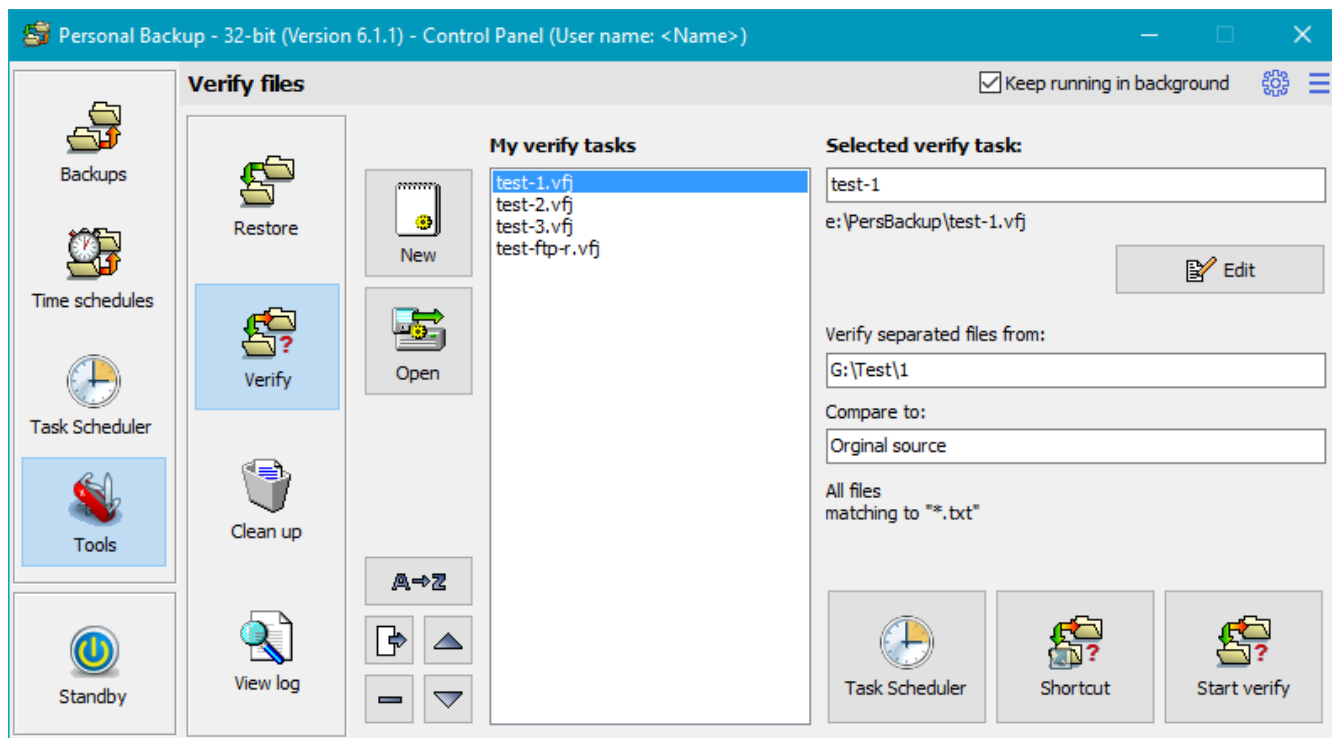
Below you will find buttons for the following functions:

- **Task scheduler:** The selected restore task will be added to **Windows Task Scheduler** to be started automatically according to the specified time schedule [more information](#).
- **Shortcut:** A shortcut will be created on the computer desktop for the currently-selected restore tasks [more information](#).
- **Start restore:** The selected restore will be **started instantly**.



Verify backed-up files

A summary of all user-configured verify tasks is displayed.



Using the buttons **New** and **Open** (to the left of **My verify tasks**) you can add a **new verify task** or an **already-saved task** to the list. Clicking on a list entry will show the associated details on the right:

- Name of verify task
- Task file with full path
- Backup directory selected for verification
- Directory to be used for comparison
- Information about file selection

Using the buttons below to the left, you can change the order of the entries and delete selected or all entries from the list. In so doing, only the list entries but not the task files will be deleted. At any time, you can add a saved task file to the list again by clicking the **Open** button.

To edit the selected verify task, click the button at the top right. A **dialog** will open where you can change the settings for this task.

Notes on creating a new verification: When clicking the **New** button, the important settings for the verification, such as backup directory and the backup method, will be predefined as specified in the **currently selected backup task**. The user need only specify how to verify (comparison with the original or any other selected directory) and if all files or only those of a specified age are concerned. You will find more information in the **detailed description**.

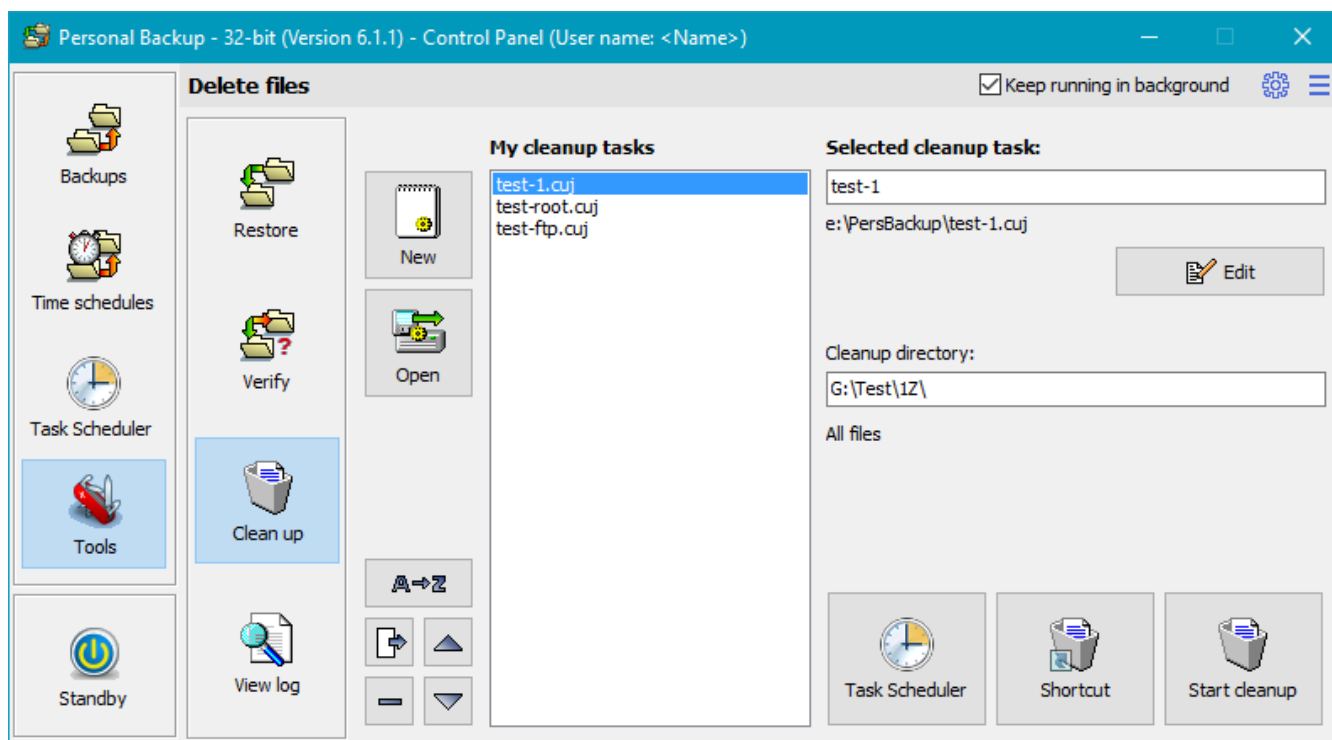
Below you will find buttons for the following functions:

- **Task scheduler:** The selected verify task will be added to **Windows Task Scheduler** to be started automatically according to the specified time schedule [more information](#).
- **Shortcut:** A shortcut will be created on the computer desktop for the currently-selected verify tasks [more information](#).
- **Start verify:** The selected verification will be **started instantly**.



Delete files

A summary of all user-configured cleanup tasks is displayed.



Using the buttons **New** and **Open** (to the left of **My cleanup tasks**) you can add a **new cleanup task** or an **already-saved task** to the list. Clicking on a list entry will show the associated details on the right:

- Name of cleanup task
- Task file with full path
- Directory selected to be cleaned up
- Information about file selection

Using the buttons below to the left, you can change the order of the entries and delete selected or all entries from the list. In so doing, only the list entries but not the task files will be deleted. At any time, you can add a saved task file to the list again by clicking the **Open** button.

To edit the selected cleanup task, click the button at the top right. A **dialog** will open where you can change the settings for this task.

Notes on creating a new cleanup task: When clicking the **New** button, the important settings for the cleanup, such as backup directory, will be predefined as specified in the **currently selected backup task**. The user need only specify whether he wants to delete files as result of a synchronization with the original or any other directory or if he wants to delete all files matching to special filter conditions, such as text patterns and/or age. You will find more information in the **detailed description**.

Below you will find buttons for the following functions:

- **Task scheduler:** The selected cleanup task will be added to **Windows Task Scheduler** to be started automatically according to the specified time schedule **more information**.
- **Shortcut:** A shortcut will be created on the computer desktop for the currently-selected cleanup tasks **more information**.
- **Start cleanup:** The selected cleanup will be **started instantly**.



View log

A **viewer window** will open to show the **default log file**. Clicking the appropriate button will print out or delete the log file. Additionally, you can search for the beginning of a backup section (*blue arrows*), backup errors (*red arrows*) or any other text. To copy the whole text to the clipboard, no text selection is required. For part of the text, select a section and type *Ctrl+C* or *Ctrl+Ins* on your keyboard.



Close program


When you exit the program, all preferences including your selections for automatic backup will be saved.




Move program to background

If at least one of the options for **Automatic backups on logoff or at time of day** is selected and/or **Show icon in notification area** is checked, the program will remain running in the background and an **icon** will appear in the **Windows notification area** (see below).

Keep running in background

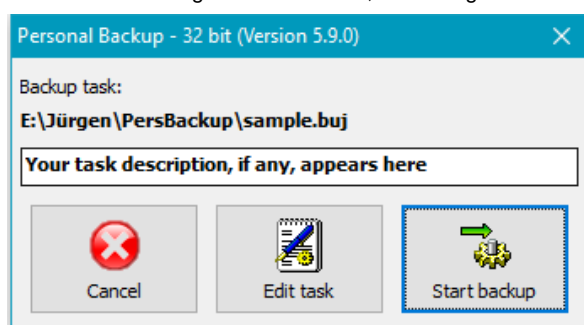
If at least one of the automatic 16 tasks is activated as time controlled or at logoff, this box will be checked by the program and the **Personal Backup** will not be terminated when closing the main window, but will continue running in the background. An  icon will then be displayed in the Windows notification area (usually at the bottom right-hand corner of the screen). Under Windows 7 and newer this icon may initially be hidden, in which case click the arrow adjacent to the notification area to view all hidden icons. To show the icon permanently (recommended), click on the icon and drag it from the hidden list to the notification area. Furthermore, the program adds a shortcut to the **startup folder of the Windows start menu** to be started automatically on next user logon if at least one automatic task (time-triggered or on logon/logoff) is active. If the user is logged on as administrator and at least one automatic task is using a **Volume Shadow Copy**, in addition the **Run as administrator** flag of this link will be set. Left-clicking the icon in the notification area will show a **list of all pending automatic backups**, right-clicking it will call a **context menu** from which one of several actions can be initiated (e.g. backup, logoff).

Clicking this checkbox will change the program behavior:

- **Checked:** The program remains running in the background after closing the main window even if no time schedule is configured. A backup can be started manually using the right-click **context menu** of the  icon.
- **Unchecked:** All automatic tasks will be temporarily disabled. If the main window is closed, the program will be terminated. You must restart the program manually to reactivate the configured automatic tasks.

Start dialog

After double-clicking a saved task file, this dialog will ask whether you wish to edit the task or start the task immediately:



Menus



Program settings, view log files, etc.



Delete tasks ... - Select and delete a saved backup, restore, verify or cleanup task file

Logs

Selected task

Show log ... - Display and optionally print the log file of the currently selected backup task

Delete log ... - Delete the log file of the currently selected backup task

Show other log ... - Select and display any log file

Delete old log files ... - Delete all log files from the current log directory older than an adjustable fixed date or older than a selectable number of days, weeks, months or years relative to the current date.

FTP communication log (see here)

View ... - Display the FTP communication log file

Delete ... - Delete the FTP communication log file

Mail delivery log (see here)

View ... - Display the mail delivery log file

Delete ... - Delete the mail delivery log file

Preferences

View ... - View settings

Start program ... - Settings for program start

Shutdown ... - Settings for backups on shutdown

Copy options ... - Basic settings for copying files

Security copies ... - Presets for security copies

Log file ... - Log settings

Printer ... - Settings for printing the log

Directories ... - Selection of the directories used by the program

Other ... - Other settings

Language - Selection of the user language

Default - Use the system default language

English

German

Dutch

French

- [Hungarian](#)
- [Italian](#)
- [Polish](#)
- [Portuguese](#)
- [Russian](#)
- [Spanish](#)

Help

[Overview](#) - Brief summary (F1)

[Context-sensitive help](#) - depending on the selected function (F2)

[Data backup](#) - Configuration of a backup task

[Backup time schedules](#)

[Windows Scheduled Tasks](#)

[Restore files](#)

[Verify files](#)

[Cleanup directories](#)

[License](#) - User license

[Version](#) - Version info

[Changelog](#) - Information on version history

[References](#) - Information on components used from other authors

[Check for update ...](#) - A connection to the Internet will be established to check if a new update is available ([details](#)).

[Homepage](#) - Homepage of Personal Backup

[Download](#) - leads directly to the download page of Personal Backup



Utilities

[Configure backup schedules](#) - Launch the supplementary program [PbPlanner](#), to configure alternating backup schedules using Windows Task Scheduler.

External Restore program

[Restore files](#) - Launch the supplementary program [PbRestore](#) to select single files from backup (even when compressed and encrypted) for restore to any location.

[Restore from zip archive](#) - Launch the supplementary program [PbRestore](#) to restore files from a zip archive in which also archives with encrypted filenames are supported.

[Start Backup under different account](#) - Launch the supplementary program [PbStarter](#) to configure backups so that they will be started under a different user account. This is good way to protect the backups from manipulation by malware.

[Thunderbird mail backup](#) - Launch the supplementary program [TbBackup](#) to help less-experienced Thunderbird users to backup and restore their mail data.

[Real-time backup of data](#) - Launch the supplementary program [PbMon](#) to start backups of selected directories automatically in background after changes are recognized.

User defined utilities

Utilities

[Configure backup schedules](#)

[External Restore program](#)

[Start Backup under different account](#)

[Thunderbird mail backup](#)

[Real time backup monitoring](#)

[Text-Editor](#)



Personal Backup Version 6

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Program preferences



All global settings for the program are saved in an ini file ([see here](#)). With one exception ([see here](#)), no settings are stored in the Windows registry. To change a setting, click the desired sub-item of *Preferences* in the **Control Panel** menu:

- Display
- Copy
- Printer
- User defined utilities
- Program start
- Security copies
- Directories
- Shutdown
- Log
- Other

The associated dialog described below will open. Click the **OK** button to apply changes.

View settings

Backup window

Default position - Position the window into the upper left corner of the screen

Default size - Change the size of the window to the default values

Features

Show tool-tips - Show or hide the additional tool-tips when moving the mouse over the program desktop

Show Windows notifications - Enable the display of notifications in the Windows Action Center

Total progress

During backup, a **status window** is displayed on the screen indicating total progress in form of a bar. Progress can be calculated in two different ways:

from file count - The total progress bar shows the number of files copied

from file sizes - The total progress bar shows the volume copied

Status window

Show always on top

You can select whether the progress bars and the status window at the end of a backup shall be displayed on top of all other windows on screen or not.

Close on automatic backups after:

After an automatic backup, the **status window** is displayed for a short time. The period until this window automatically closes can be set here.

Play sound

The end of a backup is signaled to the user by playing a sound. There are different sounds for a successful backup and for errors and warnings. Optionally these signals can be disabled, which also affects the sounds played when the program icon is added to the **Windows notification area**, for example after an automatic start of the program.

Colors for comments in backup task list

To improve the clarity of the list of your backup tasks, you can insert **comments**. The colors used for highlighting these lines can be selected by the user:

Background color - Clicking the left button will open a dialog to select the background color of the comment.

Font color - Clicking the right button will open a dialog to select the font color of the comment.

Settings for program start

Normal start

Without splash screen - Enable or disable the splash screen showing the program version (see command line option `/hide`)

Scan directories - When selected, causes the directories of the backup task to be scanned on each program start

Automatic backups

Notification of failed backup on last logoff - If this option is selected and an automatic backup on logoff or shutdown failed, you will be notified of this issue on next starting the program. Check the log for further information as to the reason for the failure.

Delay after start - The period the program waits on automatic start (see **automatic backup**) can be adjusted between 5 s and 5 min (default = 10 s). If there is an automatic backup to be performed on logon, this will start after the chosen delay. The same delay will be applied after resuming from suspend state.

Automatic program updates

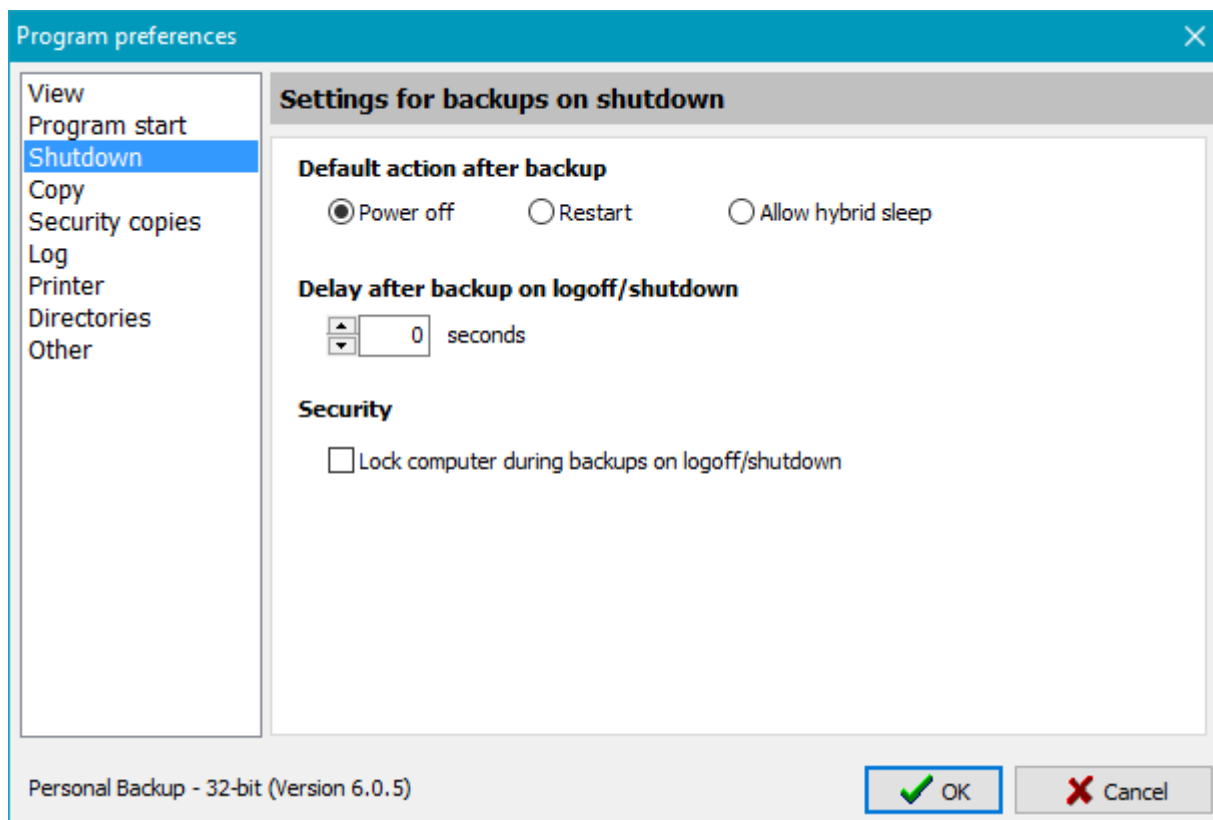
Check for updates

On starting the program a connection to the Internet will be established every 7 days to check whether a **program update** is available (default: enabled).

Use proxy for updates

A proxy server can be configured for program updates. If this is required, you must specify server name, port, user name and password.

Settings for shutdown



Default action after backup

Because it is not possible for the program to recognize the action selected by the user via Windows Start menu (*Shutdown* or *Restart*) that will interrupt the shutdown process (in this case for the backup), you can specify the action to be performed after an automatic backup here.

Power off - After backup, the computer will be switched off (default).

Restart - After backup, the computer will be restarted.

Allow hybrid sleep - After backup, the computer will not be switched off, but goes into a mode which combines hibernation and sleep. This will result in a faster boot sequence on restart (available since Windows Vista).

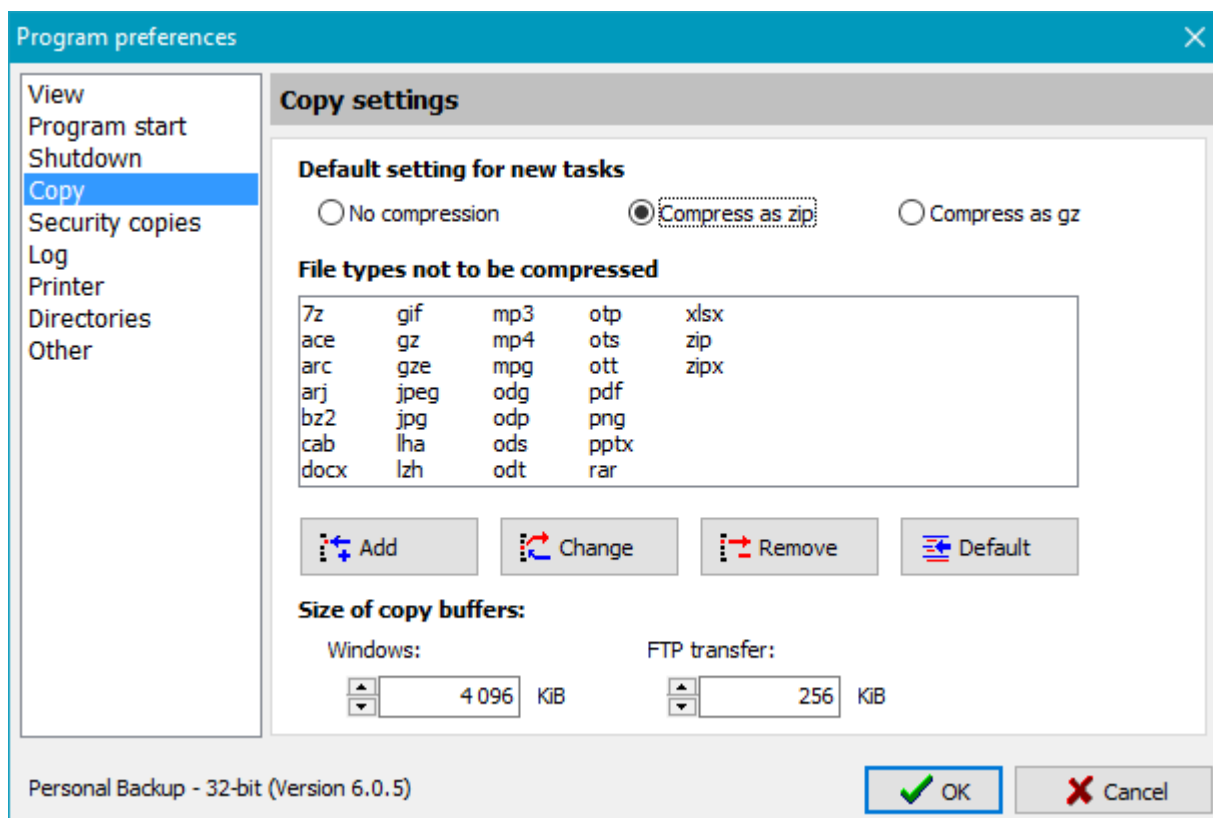
Delay after backup on logoff/shutdown

Specify the time the program waits after automatic backups before continuing with logoff or shutdown.

Security

Lock computer during backups on logoff/shutdown - To preclude access by unauthorized persons during backups started on shutdown or logoff, the computer will be locked.

Copy settings



Default setting for new tasks

The user can select which compression setting should be used as default for a new created task backing up into single files:

No compression - All files will be copied 1:1 without any compression.

Compress as zip - An individual zip file will be created at the destination location for each file to be backed up. During this, all file types listed below will not be compressed within the zip file, but all others will be compressed.

Compress as gz - All file types listed below will just be copied 1:1, but all others will be compressed in **gz** format.

File types not be compressed

File types are characterized in Windows by a filename extension that indicating the file format, e.g. *docx* being a Word document. File types that are already compressed, such as those with *.zip* extension or the OpenOffice *.odt* extension, should not be compressed again but instead just copied. This list can be edited by the user and will be used automatically for each **new task**, but existing tasks must be **adjusted manually**.

Add - The user can add to the list a file type not to be compressed.

Change - The user can select a file type in the list and change it.

Remove - The user can select a file type to remove it from the list.

Default - This will set the list to its default values, thereby excluding the following types from compression:

7z, ace, arc, arj, bz2, cab, docx, gif, gz, gze, jpeg, jpg, lha, lzh, mp3, mp4, mpg, odg, odp, ods, odt, otp, ots, ott, pdf, png, pptx, rar, xlsx, zip, zipx

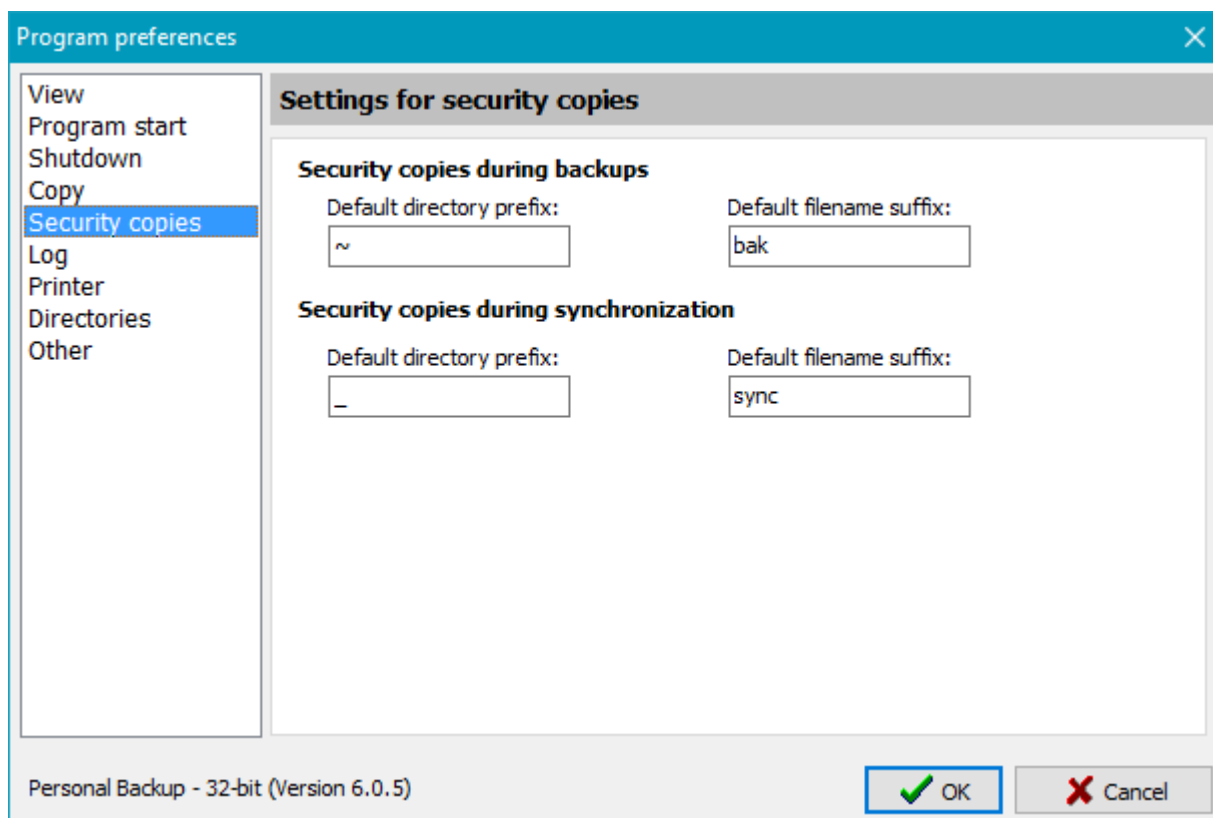
If this list of default file types changes with a new version of the program, any types not present in the user list will be (re)inserted automatically.

Size of copy buffers

The program uses an internal buffer when copying or compressing files. The size of this buffer is adjustable in multiples of 1 KiB (= 1024 Byte). The default values for new tasks are 4096 kB for Windows operations and 256 KiB for FTP transfers. Depending on the backup destination, you can change these values for each **backup task** individually to optimize the copy speed. The default values are a good compromise.

Settings for security copies

In the



options of a backup task you can determine that during backup older file versions will not be overwritten and during synchronization files no longer existing at the source will not be deleted. Instead, they will be renamed or moved to special subdirectories using adjustable identifiers. The presettings of these identifiers valid for all new backup tasks can be adjusted by the user to suit individual requirements.

Security copies during backup

Default directory prefix: - Prefix for the subdirectory to which older file versions will be optionally moved during backup (default: ~).

Default filename suffix: - Suffix for the filenames to which older file versions will be optionally renamed during backup (default: *bak*).

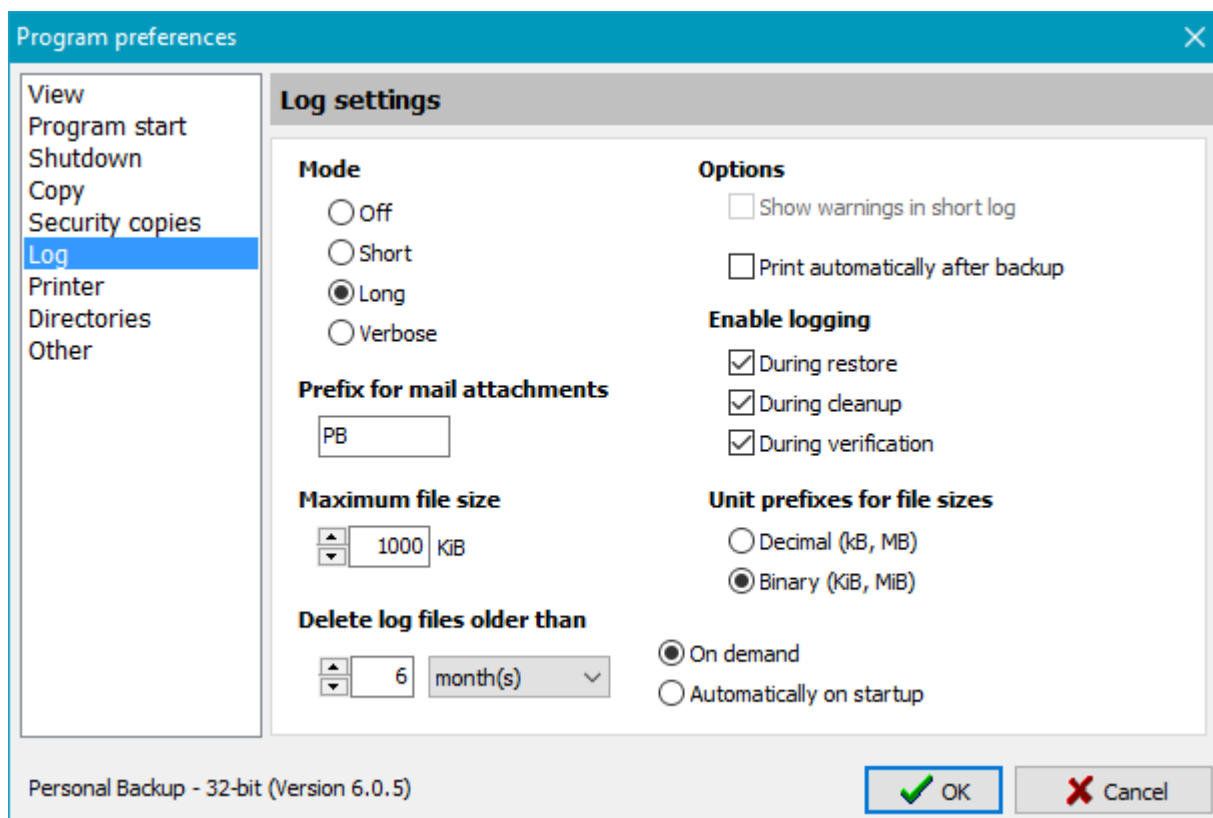
Security copies during synchronization

Default directory prefix: - Prefix for the subdirectory to which older file versions will be optionally moved during synchronization (default: _).

Default filename suffix: - Suffix for the filenames to which older file versions will be optionally renamed during synchronization (default: *sync*).

Log settings

The



following settings are the default values for the **logs** of all newly-created tasks (**Backup**, **Restore**, **Verification** and **Cleanup**). If desired, you can this adjust individually for each task.

Mode

This will define the contents of the log file. If everything goes well, a short or long log is adequate. To permit an analysis of errors you can switch to the verbose mode that will give more detailed error messages.

Short:

- Date and time of backup
- Destination directories
- Error notifications (optionally with warnings)
- Backup status with the number of files copied, deleted and checked

Long:

- As for Short including warnings
- List of all files copied on backup and all files deleted on synchronization
- Additional information for copied files: A succeeding *A* indicates that the attribute of the source file was reset (e.g. during incremental backups), a succeeding *U* indicates that an older file version was overwritten at the destination.

Verbose:

- As for Long, but with much additional information, such as timestamps, attributes, skipped files (useful only for debugging purposes) and system error messages

Options

Show warnings in short log

Warnings are generated when the backup copy succeeded but changing the attributes and/or timestamp failed at destination. In contrast to the long log, these will usually not be shown in the short log. If you wish to have these warnings also in the short log, select this option.

Print automatically after backup

If this option is selected, an automatic printout of the log file will be made to the **selected printer** after each backup.

Enable logging

During restore

If this option is selected, the log settings as defined above will be used as default when opening the **Restore dialog**. For saved **Restore tasks** the log settings can be adjusted individually.

During cleanup

If this option is selected, the log settings as defined above will be used as default when opening the **Cleanup dialog**. For saved **Cleanup tasks** the log settings can be adjusted individually.

During verification

If this option is selected, the log settings as defined above will be used as default when opening the **Verify dialog**. For saved **Verify tasks** the log settings can be adjusted individually.

Prefix for mail attachments

If a **mail** is sent following a backup, restore, cleanup or verification action, the log created can also be sent as an attachment. The name of the attached file is assembled from a prefix (default: *PB*) and the date and time the action was started. The user can change the prefix for better recognition of mails from different sources.

Maximum file size

As new logs are added to existing entries, the log files will grow ever larger. The size of these files can be limited under Log settings (see screenshot). This setting will define a maximum size for a log file. On exceeding this size, the program will rename the current log incorporating the current date (*PersBackup yyyy-mm-dd.log*). Subsequently logs will be placed into a new, initially empty, log file.

Unit prefixes for file sizes

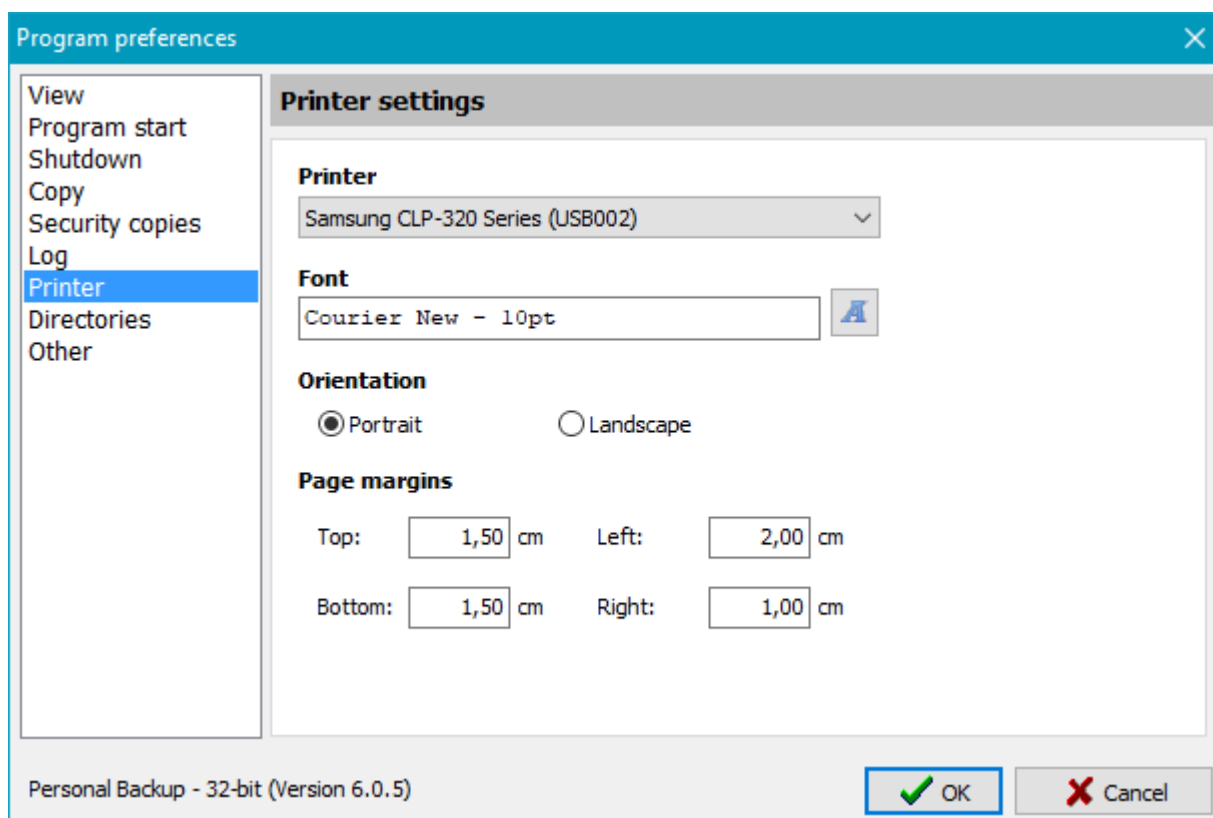
The recommendations of **IEEE 1541** differentiates between binary and decimal prefixes (e.g. 1 kB, 2 KiB, 2.5 MiB, 1.8 GB). You can select which prefix is to be used for indication of file sizes in the log file (and anywhere else in the program).

Examples: 1 kB = 1000 bytes, 1KiB = 1024 bytes, 16 MB = 16 000 000 bytes, 16 MiB = 16*1024*1024 bytes = 16 777 216 bytes.

Delete old log files

As the number of log files grows over time, you can specify an age after which log files should be deleted. The age is entered as a time span of days, weeks, months or years relative to the current date. The deletion of older log files can be done **manually** or automatically on each program start.

Printer settings



Settings for a printer are only needed if log files are to be printed.

Printer

After clicking the arrow on the right in the drop-down box you can select the printer to be used for printing the log.

Font

After clicking the button on the right you can select font name, size and style.

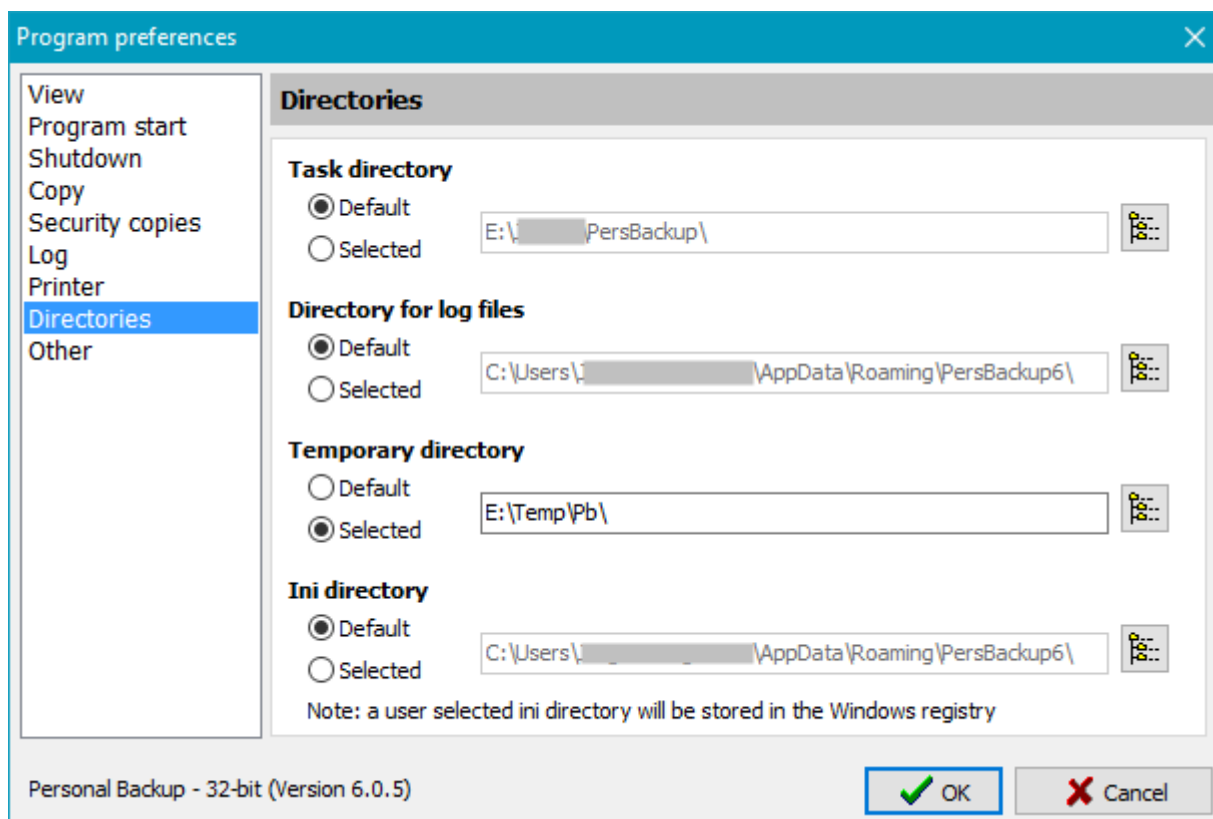
Orientation

Select the orientation of printout: *portrait* or *landscape*.

Page margins

Adjust the margins of the printout.

Directories



Task directory

This is the directory where the tasks for backups, restores, verifications and cleanups are to be stored.

Default - The directory forced by the program

Selected - Any user-selected directory

Directory for log files

This is the directory where all **log files** created by the program are to be stored.

Default - The **directory forced by the program**

Selected - Any user-selected directory

Temporary directory

This is the directory used by the program for temporary storage of files during backup and other actions. Usually all these files will be deleted by the program automatically after use.

Default - The temporary directory forced by Windows

Selected - Any user-selected directory

Ini directory

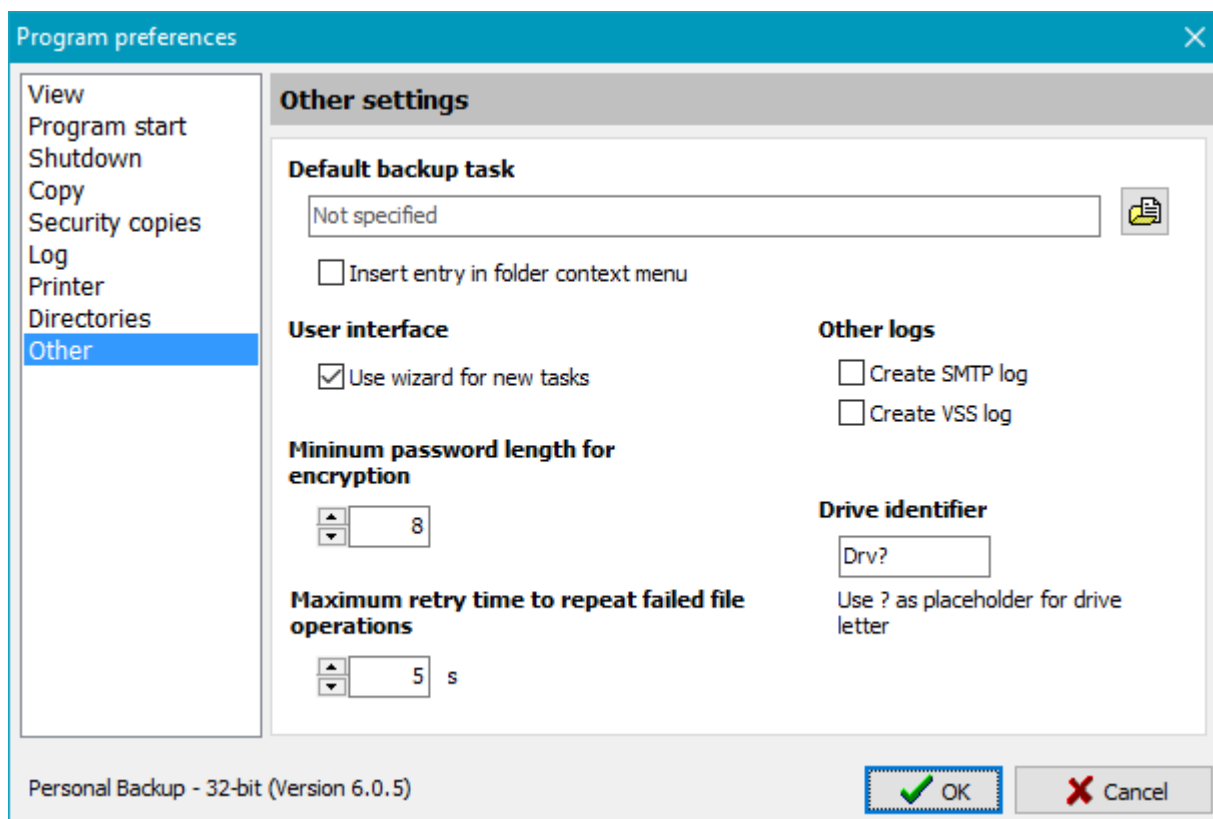
This is the location of the file *PersBackup.ini* where all the **basic settings of the program** and time schedules of the automatic tasks are stored.

Default - The **directory forced by the program**

Selected - Any user-selected directory

If this option is selected, an entry will be created in the **Windows Registry** pointing to this directory. On resetting to the default directory this Registry entry will be deleted automatically.

Other settings



Default backup task

The settings of this task will be used if a one-click backup is started from the context menu of a directory ([see more](#)). After opening the context menu by right-clicking a folder (e.g. in Windows Explorer), select the option **Backup this folder using Personal Backup ..** to start Personal Backup and to back up all files from this directory and its subdirectories into the destination directory specified in the default backup task. All other **settings** (backup mode, compression, encryption, etc.) will also be taken from this task. The **selection criteria** for subdirectories, files and file types are taken from the **first directory to be saved**.

Use selected

Select the backup task by clicking the button on the right.

Entry in folder context menu

This option will insert or remove an entry in the folder context menu of the current user. If this option is selected, the user can call a **one-click backup** of a directory (see above).

This feature is only available if the option to insert such an entry for all users was **not selected** during installation of the program .

User interface

Use wizard for new tasks - If this option is enabled, the wizard will always be started to create a new backup task. Experienced users can disable this option so that they can always freely configure the new task at will.

Other logs

Create SMTP log

During mail delivery, the communication log is written to the file *PbSmtp.log* in the log directory ([see above](#)).

Create VSS log

During creation of a volume shadow copy, a log is written to the file *PbVss.log* in the log directory ([see above](#)).

Minimum password length for encryption

Specify the minimum length of passwords for encrypted backups.

Maximum retry time to repeat file failed operations

The user can adjust the time for which the program will try to repeat a failed file operation, like renaming or setting the timestamp.

Drive identifier

The user can specify the name of the subdirectory the program will use to substitute a source drive in the destination directory on backup ([see here](#)). The default setting for this identifier is *Drv?* where the question mark will be replaced by the program with the current drive letter during backup. The user can specify any other name as identifier, e.g. *Drive?*, but it is important that the *?* remains as part of the identifier!

User defined utilities

There is a **separate menu in the Control Panel** for starting the utility programs that are part of the Personal Backup package directly. The user can add any other program to this menu by clicking the option in the preferences menu. A dialog will open for selecting the desired application (exe file) and for entering an appropriate description which will be shown in the utilities menu later on. In addition you can rearrange the entries.

J. Rathlev, 24222 Schwentinental, Germany, September 2020



Personal Backup Version 6

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Editing a backup task

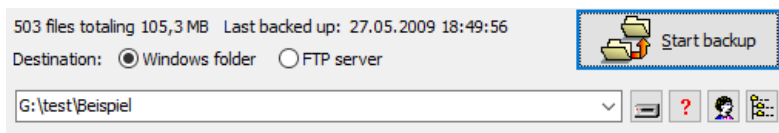


- Editing the backup destination
 - Using removable drives
 - Destination on an FTP server
 - Using placeholders
- Selection of files and directories to be backed up
 - Add directories
 - Add single files
 - Display list of directories to be backed up
 - Placeholders for source directories
 - Backing up data from removable volumes
- Removing a directory from the task
- Preview
- Extended selections
- Backup settings
- More options
- Status and error display
- Opening and saving a backup task
- Menu and context menus

Dialog window

Destination of backup

The destination path is displayed towards the top of the program center window. It can be a local path, a network path or a directory on an FTP server.



Destination (local or network)

Click on the button on the right of the entry field to select a directory anywhere on your computer or on your network or edit the path manually. Clicking the down arrow at the right of the entry field will drop down a list of recently-used destination directories for quick selection. Right-clicking this field will open a [menu for editing this list](#).

It is also possible to insert [placeholders](#) for date and time into the path and to replace the drive letter with the [volume name](#) of a removable drive (e.g. a USB stick).

User logon

If you need a special account to access the destination directory, click the button and enter the username. If also a password is specified, this will be encrypted and saved in the task file. The connection to the backup directory will be made automatically. If no password is specified, the user will be prompted to enter the password for each backup.

Volume specifier of a removable drive

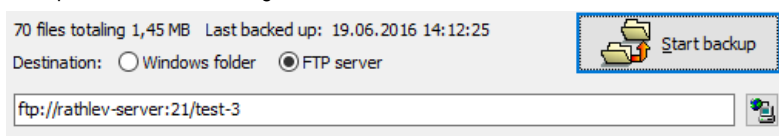
When using USB sticks or external drives as backup destination, the system may not always assign the same drive letter. To be independent from drive letters when backing up data, you can use the volume specifier of the removable media (`<:<volumename>>`) instead.

Example: instead of `K:\Backup` use `:Backup-1:\Backup`

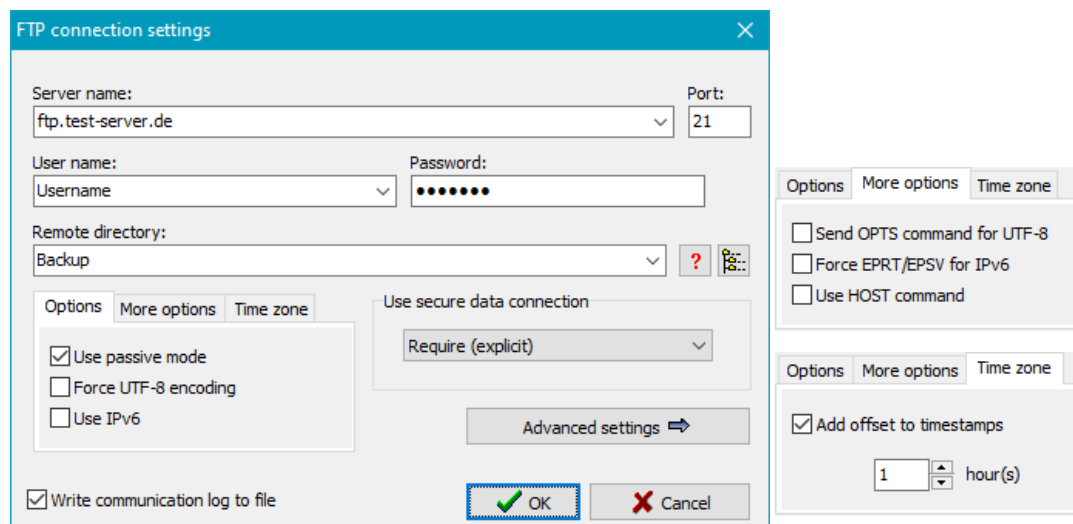
On backing up, the program will check whether a medium with the specified volume name (regardless of the assigned drive letter) is connected. If not, the user will be prompted to insert it.

Destination on an FTP server

If you select a destination on an FTP server, the server's name, port and the remote directory are displayed. Click the button at right to specify or edit the required connection settings.



General settings:



The destination directory may contain one or more [placeholders](#) for date and time.

If a password is specified in the dialog, the connection to the FTP server will be established automatically. If you leave the password blank for greater security, you must insert it manually before each backup.

- **Secure data connection:** Data transfer is encrypted using [TLS/SSL \(FTPS\)](#):
 - **None:** All data will be transferred unencrypted.
 - **If available (explicit):** On connecting, the server will be interrogated as to whether it supports TLS/SSL. If so, the data transfer will be encrypted (explicit method), otherwise unencrypted.
 - **Require (explicit):** It is expected that the server supports TLS/SSL (explicit method). If not, the connection will be canceled.
 - **Always (implicit):** All data transfers will be encrypted using the special port `990` (implicit method). If the server does not support this method, then connection will fail.

For a secure connection the option **Require** is recommended. The FTP server must support one of the TLS versions 1, 1.1 or 1.2 ([more infos](#)).

- **Options:**



Use passive mode: Using passive mode, the server will define the port for data transfer, otherwise the client will define this.

- **Force UTF-8 encoding:** Some servers support a file transfers using **UTF-8 encoding**, but do not announce this capability after establishing the connection. This is inconsistent with the specification of **RFC2640 Section 3.2** but in this special case you can force the encoding of the client side to UTF-8 by checking this option. If, in addition, the server must also be switched to UTF-8, use the option *Send OPTS command for UTF-8* described below.
- **Use IPv6:** Some servers require a connection using the **IPv6** protocol. Click this option to switch to the IPv6 address mode.

● More options:

The following options (see screenshot above right) are only required if problems arise from the FTP connection ([see here](#)). Unfortunately the available servers do not all follow the recommendations (RFCs) for the **FTP protocol** consistently. The following options are a workaround for these shortcomings.

- **Send OPTS command for UTF-8:** A server supporting UTF-8 must inform the client about this after establishing the connection and automatically switch to this mode (see **RFC2640 Section 3.2**). Unfortunately there are servers indicating the support of UTF-8, but nevertheless requiring an *OPTS* command to enable it. If this is the case, this option must be selected.
- **Force EPRT/EPSV for IPv6:** If the connection to the FTP server was established using the IPv6 protocol (see above), the data transfer usually requires the *EPRT* and *EPSV* commands, instead of *PORT* and *PASV* used for IPv4. By default, the server should inform the client about this in reply to the *feature* request (FEAT command). Unfortunately there are servers that do not follow this recommendation. If this is the case, you must switch over to this manually by clicking this option.
- **Use HOST command:** Many Internet providers use the same FTP server IP for all users. The *HOST* command is used to assign the user's server space.

● Time zone

On time-zone spanning FTP connections it is sometimes necessary to adjust the time offset manually for reliable timestamp comparisons.

● Write communication log to file:

For debugging purposes, communication with the FTP server can be logged. This option will not be saved permanently. The log is written into the file *PbFtp.log* located in the same directory as the other log files ([see here](#)). Use the **Action menu** to view or delete this file.

Clicking the *Advanced settings* button will open the following page.

Advanced settings:

● Filenames:

- **Change to lower/upper case:** Unix/Linux systems differentiate between lower- and upper-case characters in filenames. You can specify whether you wish to change all file and directory names to *lower* or *upper* case prior to data transfer.
- **Allow quoted filenames:** Filenames with spaces will cause errors on an FTP transfer. Some servers allow filenames within quotation marks (as is common under Windows).
- **Character encoding:** As there are still FTP servers that do not support UTF-8 encoding, you can specify that certain characters are to be replaced by a numeric code as is usual in URL addresses (e.g. a space = %20).

● Use Proxy server:

If a proxy gateway is required to connect to the FTP server, you can specify the desired settings here.

● Establishing the connection:

- **Maximum number of attempts:** Specify the maximum number of attempts to connect to the FTP server. If this fails, the backup will be canceled.
- **Maximum waiting time to establish the connection:** Specify the maximum time to wait for a reply from the FTP server after sending the connect command. If establishing the connection fails, further attempts will be made until the maximum number is reached (see above).


● Controlling the connection:

- **Maximum waiting time for server response:** Specify the maximum time to wait for a response from the FTP server after sending a command.
- **Send keep-alive command during data transfer:** With some FTP servers or firewalls it can happen that during lengthy data transfers the control channel will be closed due to inactivity. Enabling this option, a small data packet will be sent periodically to prevent this issue.

You can find more information **about FTP** on [Wikipedia](#).

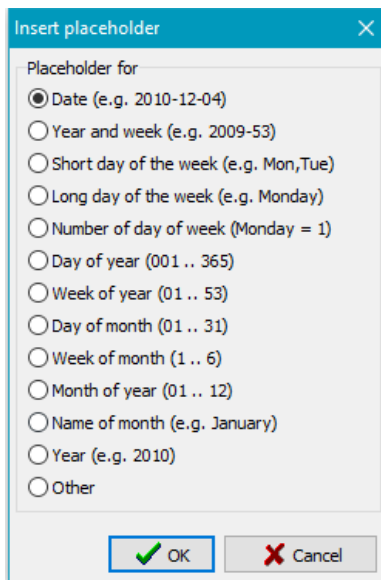
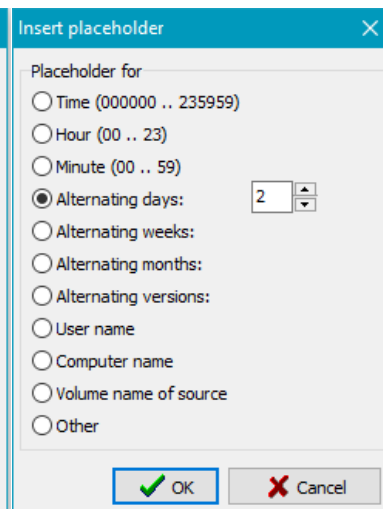
Using placeholders

Different placeholders in the format **%sss%** can be added to the destination path to be replaced with current values on backing up. You can insert a placeholder manually into the path or select it from the lists opened by clicking the button

 (see to the right).

The following placeholders are available:

- **%date%** - Date in the format "yyyy-mm-dd" (e.g. 2010-12-04)
 - **%yaw%** - Year and week in the format "yyyy-ww" (e.g. 2009-53)
 - **%dow%** - Short day of week in the format "Mon, Tue, Wed, Thu, Fri, Sat, Sun"
 - **%ldow%** - Long day of week in the format "Monday, Tuesday, etc."
 - **%dnw%** - Number of day of week (Monday = 1, ..., Sunday = 7)
 - **%day%** - Day of year in the format "ddd" (e.g. 1 = January 1)
 - **%week%** - Week of the year in the format "ww" (i.e. 01 .. 53)
 - **%dom%** - Day of month in the format "dd" (i.e. 01 .. 31)
 - **%wom%** - Week of month in the format "w" (i.e. 1 .. 6)
 - **%month%** - Month of year in the format "mm" (i.e. 01 .. 12)
 - **%lmonth%** - Name of month in the format "January, February, etc."
 - **%year%** - Year in the format "yyyy" (e.g. 2010)
 - **Other** - Will switch to the secondary list at right
-
- **%time%** - Time of day in the format "hhmmss" (e.g. 215325)
 - **%hour%** - Hour in the format "hh" (e.g. 17)
 - **%minute%** - Minute in the format "mm" (e.g. 43)
 - **%d#n%** - n (= 2..366) Alternating days: inserts the number of the day of the year modulo the specified number n (e.g. **%d#2%** is replaced by 1 on odd days of the year, by 2 on even days)
 - **%w#n%** - n (= 2..53) Alternating weeks: inserts the number of the week of the year modulo the specified number n (e.g. **%w#4%** is replaced by 1 in the weeks 1,5,9,... of the year, by 2 in the weeks 2,6,10,..., by 3 in the weeks 3,7,11,... and 4 in the weeks 4,8,12,...)
 - **%m#n%** - n (= 2..9) Alternating months: inserts the number of the month of the year modulo the specified number n (e.g. **%m#3%** is replaced by 1 in the months 1,4,7,10, by 2 in the months 2,5,8,11 and by 3 in the months 3,6,9,12)
 - **%v#n%** - n (= 2..99) **Alternating versions:** inserts the number of the backup modulo the specified number n (on each completed backup the number will be increased by one - e.g. **%v#3%** will be replaced by 1 on 1st, 4th,7th, by 2 on 2nd, 5th, 8th and by 3 on 3rd, 6th, 9th backup). To reset the counter, use the function in the **Backup task menu**.
 - **%username%** - Name of the logged-on user
 - **%computername%** - Name of the computer
 - **%volume%** - Volume name of source (only available if all source directories are on the same drive)
 - **Other** - Will switch to the primary list at left

Placeholder for Windows environment variables: In addition you can use any **Windows environment variable** as part of the destination path.

Insert the placeholder **%evar(<name>)%** manually. The expression inside the brackets (<name>) should be replaced by the name of the environment variable, e.g. **%evar(HOMEPAH)%** or **%evar(TEMP)%**.

Example: X:\Backup\Data-%date% X:\Backup\Data-2004-10-17

Hence another backup directory will be generated each day.

Selection of files and directories to be backed up

Add directories

Next, select the directories to be backed-up. Click on the **Directories** tab and select the desired directories you wish to back up. If you select only one directory, it will be displayed in the upper field and can be added directly to the task by clicking the button.

If you select more than one directory (possibly from libraries), after clicking the button these will be displayed as a list prior to being added to the task. You can check and optionally deselect individual directories. A click on the **OK** button will add the directories to the task one after the other.



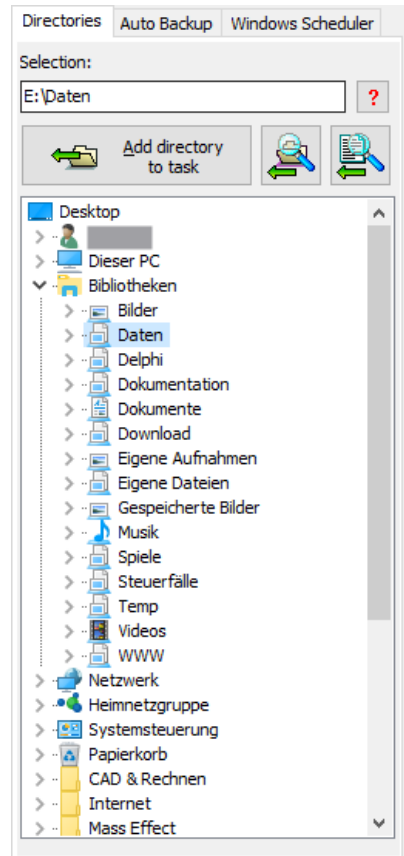
If you wish to inspect the files contained in the selected directory, click this button. The dialog box option *Show files* allows you to display a file list, but you can select only one directory.

Add single files



If desired, you can select one or more files from a directory directly for backup. Clicking the button will open a dialog to select the files. Then the program will automatically make all required settings:

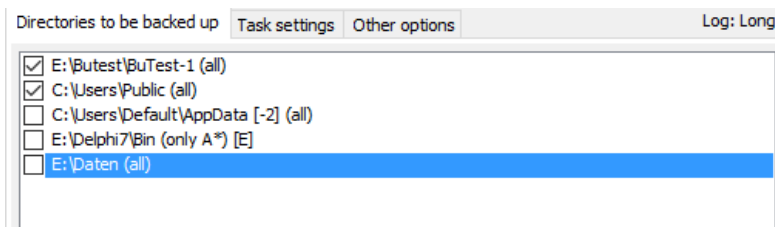
- The directory containing these files will be added to the backup task.
- All subdirectories will be excluded from backup. They are not displayed in **tree view**.
- The **file filter** will be set such that only the selected files will be backed up. By clicking the button



provided this selection can be changed afterwards.

- The selection of **file types** will be disabled.

Display of directories to be backed up



The names of all selected directories will be added to the task list in the center. Long names will appear abbreviated in the task directory list such that the beginning and end of the path will remain visible. Moving the mouse over a such a name will display the full path as a tool-tip.

The **checkbox** on the left can be cleared by clicking to exclude the selected directory from backup temporarily without removing it from the list. If you wish to resume the backup for this directory just click the checkbox again.

After each directory name, **additional info** is displayed in an abbreviated form to indicate the **subdirectories selected and any filter settings for file and file types**:

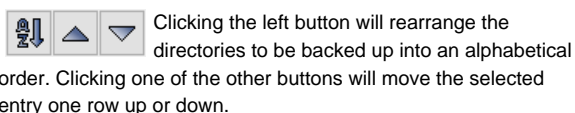
- [F]**: Individual files from a directory were added for backup ([see more](#)).
- (-n)**: There are *n* **subdirectories** excluded.
- (+n)**: There are *n* **subdirectories** selected.
- (all)**: No file filter has been specified.
- (only {filter})**: A file filter *{filter}* (e.g. [AB]*) has been specified to select certain files (See [Standard file filter](#))
- (except {filter})**: A file filter *{filter}* (e.g. [AB]*) has been specified to exclude certain files (See [Standard file filter](#))
- (from/to date/time span)**: A **time slot** has been specified under the **Files** tab. By default, the modification time is used as reference. Optionally the creation time or both can be selected - displayed by *[C]* or *[B]*.
- (U)**: Only files that were created or modified after the time of the last backup of this task
- (</> size)**: Only files matching a **predefined size** (e.g. <16MB or >1kB) will be backed up.
- [+/-attr]**: Certain **attributes** (e.g. [+a-r]) will be included or excluded.
- [I]**: A **type list** has been specified via the option "Only these" under the **Types** tab.
- [E]**: A **type list** has been specified via the option "All except" under the **Types** tab.

Clicking one of the listed directories will display the tree of all subdirectories or, dependent on the user's selection, the file filters or file types in the program bottom window ([see more](#)). Doing this click for the first time after opening the task, will additionally scan all these subdirectories for new and changed files and update the display for file count and volume.

Disabled entries

On loading a task or clicking one of the listed items, the program will check whether the associated directory still exists. For example, it could have been deleted or renamed in the meantime, or is a disconnected external drive. Such a directory will be **disabled in the list** and displayed in gray. To prevent the **selection settings** from being changed, it is no longer clickable. As soon as the directory becomes available again, the item will be enabled again automatically. If you want to remove from the task all directories no longer available, use the item from the associated **context menu**.

Order of entries

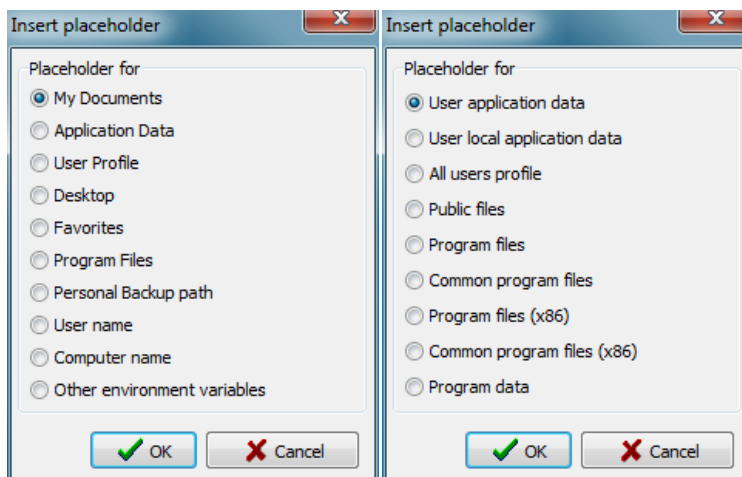


Possible placeholders for source directories

Clicking the button at the top on the right will open a dialog box. All placeholders are in the format "%sss%". These will be

replaced with current values on backing up (see screenshot on the right):

- **%perspath%** - Path to the *My Documents* user directory
- **%apppath%** - Path to the *Application Data* (*..AppData* under Windows 7) user directory
- **%profile%** - Path to the user profile (e.g. *C:\Users\<Name>* under Windows 7)
- **%desktop%** - Path to the user desktop folder
- **%favorites%** - Path to the user favorites folder
- **%progfiles%** - Path to the programs folder depending on the running version of **Personal Backup**: the 32-bit version returns *C:\Program Files* on 32-bit systems and *C:\Program Files (x86)* on 64-bit systems, the 64-bit version returns always *C:\Program Files* (e.g. *C:\Program Files*)
- **%progpsth%** - Path to the Personal Backup program installation folder
- **%username%** - Name of the logged-in user
- **%computername%** - Name of the computer



Other environment variables:	Windows Vista/7/8/10	Windows XP
• %appdata%	<i>C:\Users\<username>\AppData\Roaming</i>	<i>C:\Documents and Settings\<username>\Application Data</i>
• %localappdata%	<i>C:\Users\<username>\AppData\Local</i>	not available
• %allusersprofile%	<i>C:\ProgramData</i>	<i>C:\Documents and Settings\All Users</i>
• %public%	<i>C:\Users\Public</i>	not available
• %programfiles%	<i>C:\Program Files</i>	<i>C:\Program Files</i>
• %commonprogramfiles%	<i>C:\Program Files\Common Files</i>	<i>C:\Program Files\Common Files</i>
• %programfiles(x86)% *	<i>C:\Program Files (x86)</i>	<i>C:\Program Files</i>
• %commonprogramfiles(x86)% *	<i>C:\Program Files (x86)\Common Files</i>	<i>C:\Program Files\Common Files</i>
• %programdata%	<i>C:\ProgramData</i>	not available

* only available on 64-bit systems

Backing up data from removable volumes

If you want to back up files from a removable drive (e.g. a USB stick) you cannot be certain that the same drive letter will always be assigned. In such a case, using file synchronization on backup may result in loss of data in the backup directory.

To prevent this, the program saves the volume name (if assigned) with any directory to be saved and located on a removable drive when creating a new task. So it is strongly recommended to assign a unique volume name to any used removable drive. Right-clicking on a drive in for example Windows Explorer and selecting Properties will allow you to do so.

Before a backup starts, the program checks whether this drive is present. If not, the backup will be canceled.

Note: If the backup method is set to *Separate directories for drives*, the name of the root directory at the destination will be generated from the volume name (e.g. *G:\Backup\Data-1.* for volume called *Data-1*) instead of using the drive letter (e.g. *G:\Backup\DrvK1.*) as applied for fixed drives ([see more](#)).

Removing a directory from the task



To remove a directory from the task list, click on the  button. Optionally, also all files backed up from this directory can at the same time be deleted from the backup task destination.

Preview

Right-clicking the list of selected directories will open a **context menu** with several **preview** options

- **Show all selected files:** Show all files that are selected for backup using the current **filter settings**. Which of these files really will be backed up will be decided later, on performing the backup.
- **Show all excluded files:** Show all files that are excluded from the backup using the current **filter settings**.
- **Show all files to be backed up:** This item is only available if solely files with the **archive bit set** should be backed up. All these files will be displayed.
- **Show all files not to be backed up:** This item is only available if solely files with the **archive bit set** should be backed up. All files with this bit not set will be displayed.

Extended selections

In the program bottom window you can make more detailed selections for

- **Subdirectories**
- **Files and attributes**
- **File types**

Advanced settings

In most cases you can use the default settings for a backup, but the more experienced user may prefer to configure the many individual options.

- **Backup destination:** In separated files or in zip file(s).
- **Backup mode:** Update (using timestamp or archive bit) or configured as an alternating schedule (full and differential or incremental).
- **File processing:** Copy as-is, or use compression and/or AES encryption.
- **Options:** Copy alternate file streams, document summaries, file permissions, verify backed-up files, etc.
- **Synchronization:** Delete from the backup destination files that no longer exist at the source.
- **Security backup:** Older versions of files are renamed instead of being deleted (with a definable number of previous versions).
- **Mail delivery:** Automatic mail delivery after backup with status and optional log.
- **External programs:** Execute any external program or script before and/or after a backup.

Information about task

At the top of the program center window, key information about the current task is displayed:

- **Name** of task
- **Total number** of files and the storage capacity required for these (before compression)
- **Time and date** when last backed up

Notes

To accelerate the loading of a task, the number of files, the required storage capacity and the type list for the selected directories are not all updated immediately. By default, only the first directory will always be scanned for new files. You can uncheck the option *Scan directories* in the dialog called from **Preferences Program start ...** in the main menu to disable any scan after opening a task. In this case, a scan is started not before one of the directories to be backed up is left-clicked.

Errors during backup

There can be many different reasons for errors that arise during a backup. After each backup, the status windows will display whether errors occurred and how many. Detailed information about errors will be found in the log file. If a file could not be copied due to an error, its previous version will in any case be retained at the destination.



Opening a saved backup task

Load a saved task (.buj file) for **editing** or **execution**.



List of recently-opened tasks

Clicking this button will open the task menu that contains a list of up to 15 of the most recently-opened tasks. Click within the list to load a task. Right-clicking the icon will allow the list to be edited.



Saving an edited task

You should save your backup tasks to disk for future use as a file with the extension **.buj**. When starting the program for the first time, a task directory is created at "My Documents\PersBackup". You can change this location using **Preferences Directories** in the main menu. The backup tasks are saved as readable ASCII files, but modifying such a file manually with a text editor is not recommended. Instead, edit the task within the "Personal Backup" program.

Note: provided that a task has not been changed, this button will remain grayed out.

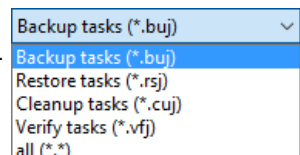


Saving a task with a new filename

An existing or edited task can be saved under a new filename.

Delete a task no longer needed

Over time, more and more tasks for backup, restore, cleanup and verify will be accumulating. They are stored in the **task directory** as files using the extensions **buj (Backups)**, **rsj (Restores)**, **cuj (Cleanups)** and **vfj (Verifications)**. By clicking the **Delete ...** function in the **menu** any of these tasks can be deleted. At the bottom right of the file selection dialog, you can specify the type of the affected task and then select the file. Associated entries in the **task lists** will be removed as well.



Insert a saved task (Import)

The directories to be backed up in an existing task can be added to the list of directories of the currently-opened task. The global settings (destination directory, backup mode etc.) of the opened task remain unchanged.

Save selected directories as a new task (Export)

A dialog will open for selecting the directories to be backed up from which a new task is to be created. The global settings (destination directory,

backup mode etc.) will be inherited from the opened task.

Menu

Backup task

- New** - Create new backup task
- Open ...** - Open saved task from the directory of the last opened task
- Open from task directory ...** - Open saved task stored from the selected **task directory**
- Save** - Save a modified task
- Save as ...** - Save task under new name
- Delete ...** - Delete a task no longer needed
- Reset counter ...** - Reset the backup version counter to 1
- Import ...** - Import directories to be backed up from saved task
- Export ...** - Save as a new task an individual directory from an opened task
- Recently-opened tasks ...** - List of recently-opened tasks to facilitate reopening

Actions

- Start backup ...** - Start the current backup task
- Add directory to task ...** - Select a directory to be backed up and add to task
- Verify backup ...** - Using the settings of the currently opened backup task a guide, the dialog for backup verification will be displayed. You can edit the settings and start the verification of files.

Scheduled Tasks

- Add current backup task** - Configure Windows Task Scheduler to perform the currently-loaded backup
- Edit scheduled task** - Select a backup task performed by Windows Task Scheduler and edit the schedule.

Create desktop shortcut

- for current task ...** - Create a shortcut to the currently-opened backup task on the computer desktop. Double-clicking this shortcut will immediately start the backup.
- for several tasks ...** - Create a shortcut to several selected backup tasks on the computer desktop. Double-clicking this shortcut will automatically perform these backups one after the other.

Logs

Current log

- Show ...** - Display and optionally print the log of the currently-opened backup task
- Delete ...** - Delete the log of the currently-opened backup task

- Show other ...** - Display and optionally print a saved log

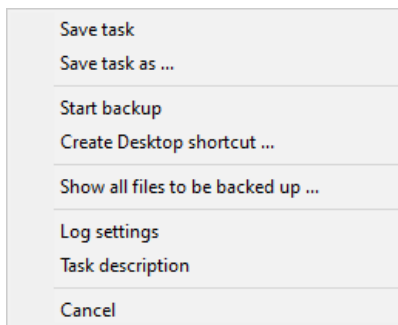
Update view (Function key F5) - Update the task view (count all files and calculate the volume to be backed up) and the directory view

Help

- Overview** - Brief summary
- Backup** - Editing a backup task
- License** - User license
- Version** - Version info
- Changelog** - Information on version history
- References** - Information on components used from other authors
- Homepage** - Homepage of Personal Backup
- Donate** - Make a donation to Personal Backup

Context menus

A right-click on certain areas of the desktop opens one of the following context menus.

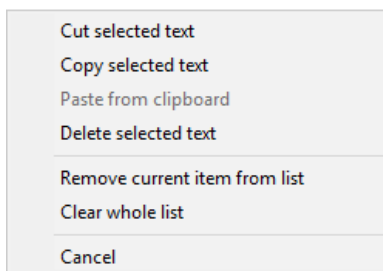


Area "Task"

- Save task** - **Save current task** to disk
- Save task as ...** - **Save current task as new file** to disk
- Start backup ...** - **Start current backup task** immediately
- Create desktop shortcut ...** - **Create a desktop shortcut** for starting the currently-open backup task
- Show all files to be backed up ...** - This item is only available when only files are to be backed up having the **archive bit** been set or the backup is made to zip files. Show all files in the selected directory and its subdirectories that would be backed up currently.
- Log settings ...** - **Settings for the backup log**
- Task description** - **User's description for the backup task**

Area "Destination directory"

- Cut selected text** - The marked text in the destination field will be copied to the clipboard and then deleted.
- Copy selected text** - The marked text in the destination field will be copied to the clipboard.
- Paste from clipboard** - Text from the clipboard will be inserted into the destination field.
- Delete selected text** - The marked text in the destination field will be deleted.
- Remove current list item from list** - The selected destination directory will be removed from the internal list of recently-used directories.
- Clear whole list** - The internal list of recently-used directories will be deleted



entirely.

Area "Directories to be backed up"

Show all selected files ... - Show all files in the selected directory and its subdirectories that are selected for backup using the current filter settings

Show all excluded files ... - Show all files in the selected directory and its subdirectories that are excluded from backup using the current filter settings

Show all files to be backed up ... - This item is only available when only files are to be backed up having the **archive bit** been set or the backup is made to zip files. Show all files in the selected directory and its subdirectories that would be backed up currently.

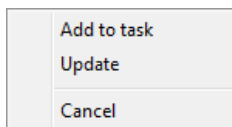
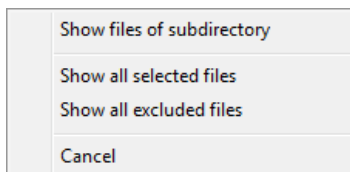
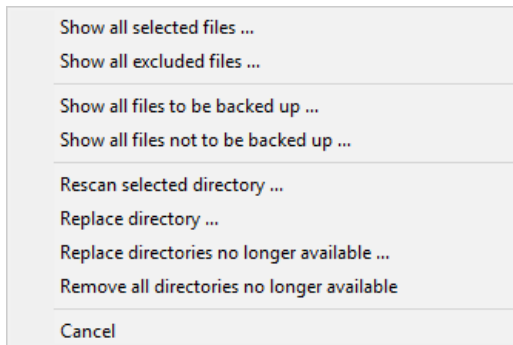
Show all files not to be backed up ... - This item is only available when only files are to be backed up having the **archive bit** been set or the backup is made to zip files. Show all files in the selected directory and its subdirectories that would **not** be backed up currently.

Rescan selected directories ... - The selected directory will be scanned to update file count and volume.

Replace directory ... - The directory selected to be saved will be replaced by another. The new directory can be selected using a dialog. All other settings for this entry will remain unchanged. This option can also be used if the name of an external volume has changed. The directory entry will be updated automatically.

Replace directories no longer available ... - Directories not available when loading the task (because they have been deleted or renamed, for example) are disabled and displayed in gray. Select this menu item to replace them by other existing directories. All other settings for these entries will remain unchanged.

Remove all directories no longer available - Directories not available when loading the task (because they have been deleted or renamed, for example) are disabled and displayed in gray. Select this menu item to remove them from the currently-loaded task.



Area "Subdirectories"

Show files of subdirectory ... - All files located in the selected subdirectory will be displayed. This is very useful for checking whether there are any files that should or should not be backed up.

Show all selected files ... - Show all files that are selected for backup using the current filter settings

Show all excluded files ... - Show all files that are excluded from backup using the current filter settings

Area "Directory selection"

Add to task - The selected directory will be added to the backup task.

Update - Update directory tree.



Selection of subdirectories and files to backed up



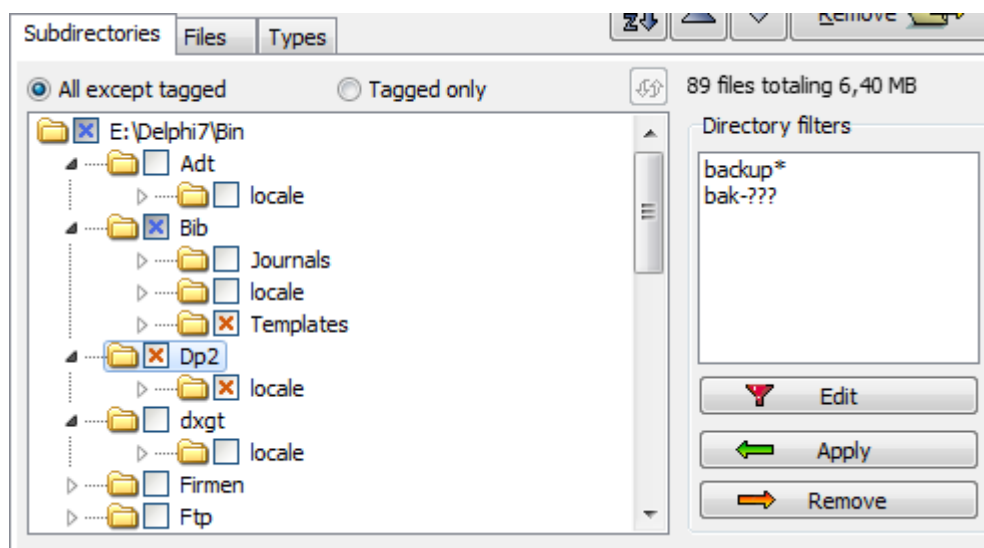
All settings described below can be applied individually to each directory selected for backup. There are three basic options for confining the selection of files to be backed up, all of which can be combined in any way:

- The exclusion or selection of **subdirectories**
- The selection of filter conditions for **filenames**
- The selection of **file types** (extensions)

Subdirectories

There are two main subdirectory-selection options:

- **All except tagged:** In this case, all subdirectories not tagged with will be backed up. This option is selected by default so that directories added later will always be backed up. As soon as at least one subordinate directory



is selected to be excluded from a backup, its parent directory will be marked with . Clicking the symbol will open the branch to display its subdirectories.

Files in the **root directory** and in the subdirectories marked with will **always be saved**.


- **Tagged only:** In this case, only those subdirectories tagged by will be backed up. Subdirectories added later will not be backed up unless intentionally manually tagged. As soon as at least one subordinate directory is selected to be included in a backup, its parent directory will be marked with . Clicking the symbol will open the branch to display its subdirectories.

Files in the **root directory** and in the subdirectories marked with will **never be saved**.

Right-clicking a subdirectory will display a context menu in which its files and folders can be previewed subject to a choice of options.

Note: If only a few subdirectories are to be backed up, it is usually better to add these directly as directories to be saved ([see more](#)) instead of selecting them as described above.

Status

On directory trees with fewer than 5000 files, the status display (file count and volume) above the *Directory filters* window is refreshed automatically. To save time with larger trees, a refresh will not be performed until the  button on the left is clicked.

Using dynamic directory filters

On the right of the dialog box under *Directory filters* you can define dynamic filters for subdirectory names. Each time before starting a backup, e.g. as automatic backup or by a desktop shortcut, the program checks whether there are subdirectory names that fall under the given filter conditions.

These subdirectories will then be included in or excluded from the backup depending on the selection mode. For example, all directories with names starting with *temp* can be excluded from the backup. Any matching subdirectories created later will also be excluded.

This filter list applies for the whole of each backup task. You can select one or more items from the list to apply them to the current directory tree.

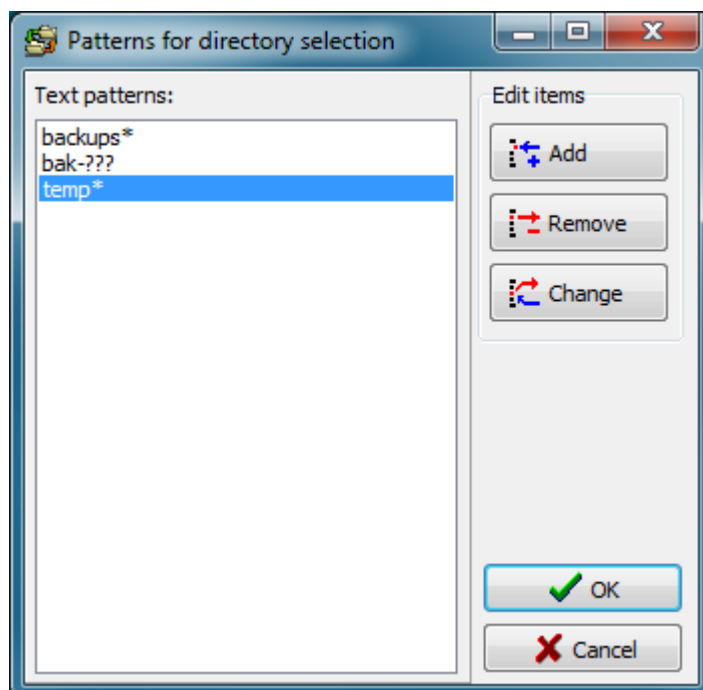
Applying filters

Select the desired filters in the *Directory filters* window and apply them to your tree by clicking the *Apply* button. You can similarly undo this selection by clicking the *Remove* button.

Editing filters

By double clicking a filter entry you can edit it directly. Clicking the *Edit* button will open a dialog box showing all filters (see screenshot on the right). Here you can add, remove and change filters. A filter must use [the syntax described below](#) or may be a [regular expression](#):

1. **[Pattern]**: all subdirectories matching the **pattern** are selected or excluded, for example *backups** will select all subdirectories with names beginning with "backups".
2. **#[Pattern]**: as 1., but *[Pattern]* is a **regular expression** (e.g. *#temp[123]*).




Selection of files

Filter

Clicking the *Settings* button will call a dialog box in which you can specify certain filter conditions [see below](#) and select whether filenames (optionally including their extension) matching this filter are to be backed up or not. Optionally, you can use [regular expressions](#).

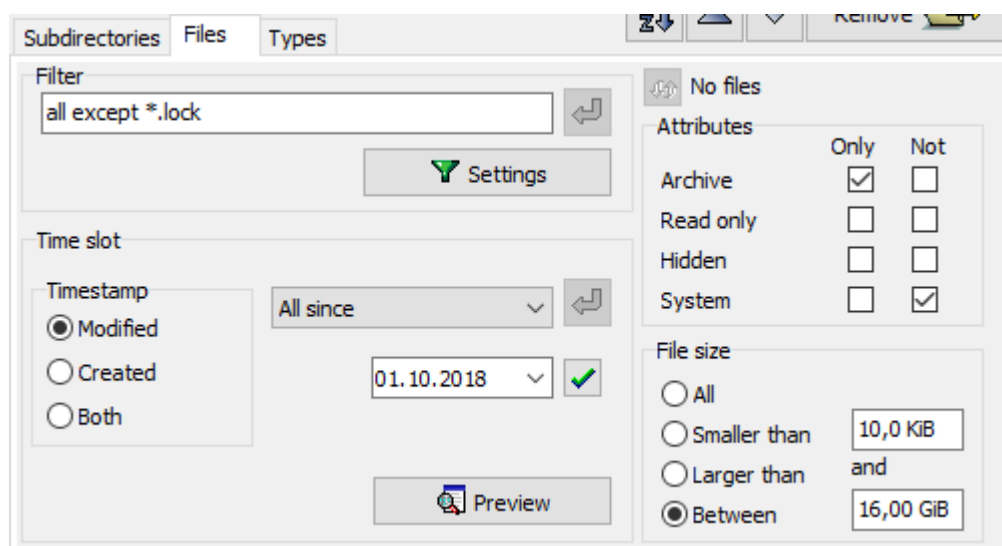
The search patterns can be specified by editing the field directly or by editing a filter list after clicking the *Edit patterns* button.

If more than one directory is to be backed up, the filter settings from the previous entry of the [list of directories to be backed up](#) can be copied by clicking the  button.

Filters only for file extensions should be [set separately](#)

File attributes

Optionally, you can restrict the backup and/or to files with selected attributes.



Any combination of **file attributes** is selectable:

With neither **Only** nor **Not** selected: this attribute will be ignored

With **Only** selected: only files with this attribute set will be backed up

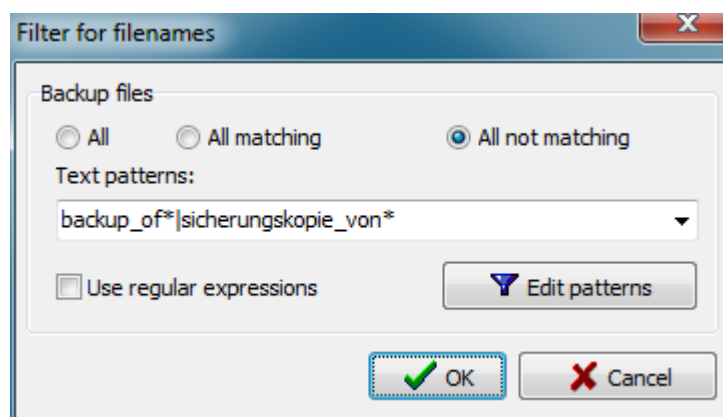
With **Not** selected: files with this attribute set will not be backed up

Time slot

Using this option, you can restrict the backup to files with a **modification** or **creation timestamp** (date/time) within certain limits. If *Both* is selected, the program will first check the modification time and, if this does not fit, the creation time. By this means, all files will be selected for backup that meet at least one condition.

If more than one directory is to be backed up, the setting from the previous entry of the **list of directories to be backed up** can be copied by

clicking the  button.



For **time comparison** either the modification or creation timestamp can be selected. The following time slots are available:

All files (no time restriction)

Only files that were created or modified since a given date,

Only files that were created or modified before a given date,


Only files that were created or modified within a given time slot,

Only files that were created or modified since a given time on the current day,

Only files that were created or modified since a preset number of days before the current date

Only files that were created or modified before a preset number of days before the current date

Only files that were created or modified after the time of the last backup of this task

The required date can be set manually or by selection via the calendar. Please note that changing date or time must be confirmed by clicking the  button.

Note: It is also possible to specify these settings using a **command line option**.

File size

Optionally, you can restrict the backup and/or to files of a size within certain limits

The following size-limit filters are available:

All files

Files smaller than the preset value

Files larger than the preset value

File sizes between a lower and an upper value

Note: File sizes may be expressed using various unit prefixes (e.g. 1 kB, 2.5 MiB, 1.8 GB). In this regard, the program follows the recommendations of **IEEE 1541** and therefore differentiates between binary and decimal prefixes.

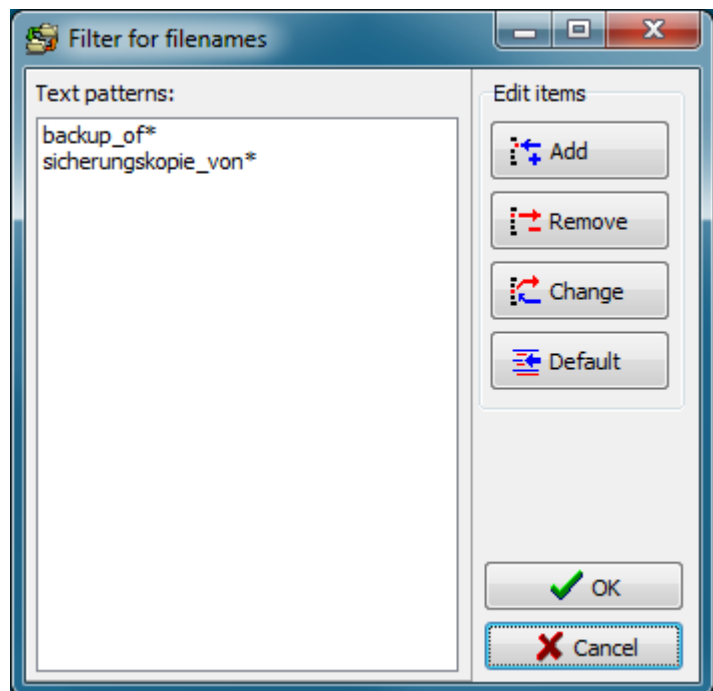
Examples: 1 kB = 1000 bytes, 1KiB = 1024 bytes, 16 MB = 16 000 000 bytes, 16 MiB = 16*1024*1024 bytes = 16 777 216 bytes.

Standard file filter (not using regular expressions)

A valid file filter pattern consists of **literal characters** (e.g. letters or digits), **sets** and **wildcard characters**.

Each literal character must match a single character in the string. The comparison to literal characters is case-insensitive.

Each **set** begins with an opening square bracket ([) and ends with a closing square bracket (]). Between the brackets are the elements of the set. Each



element is a literal character or a range. Ranges are specified by an initial value and a final value separated by a hyphen (e.g. `[A-D]`). Do not use spaces or commas to separate the elements of the set. A set must match a single character in the string. The character matches the set if it is the same as one of the literal characters in the set, or if it is in one of the ranges in the set. A character is in a range if it matches the initial value, the final value, or falls between the two values. All comparisons are case-insensitive. If the first character after the opening bracket of a set is an exclamation mark (!), then the set definition will be inverted, that is to say a character not in the set will be accepted as matching.

Wildcard characters are asterisks (*) or question marks (?). An asterisk matches any number of characters. A question mark matches a single arbitrary character.

Examples:

backups - the name matches exactly

backup* - all names starting with "backup" will match

[abc]* - all names starting with "a", "b" or "c" will match

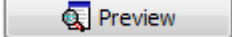
?[ab]* - all names that have "a" or "b" as the second letter will match

[a-m]* - all names having "a", "b", "c", .. , "m" as the first letter will match

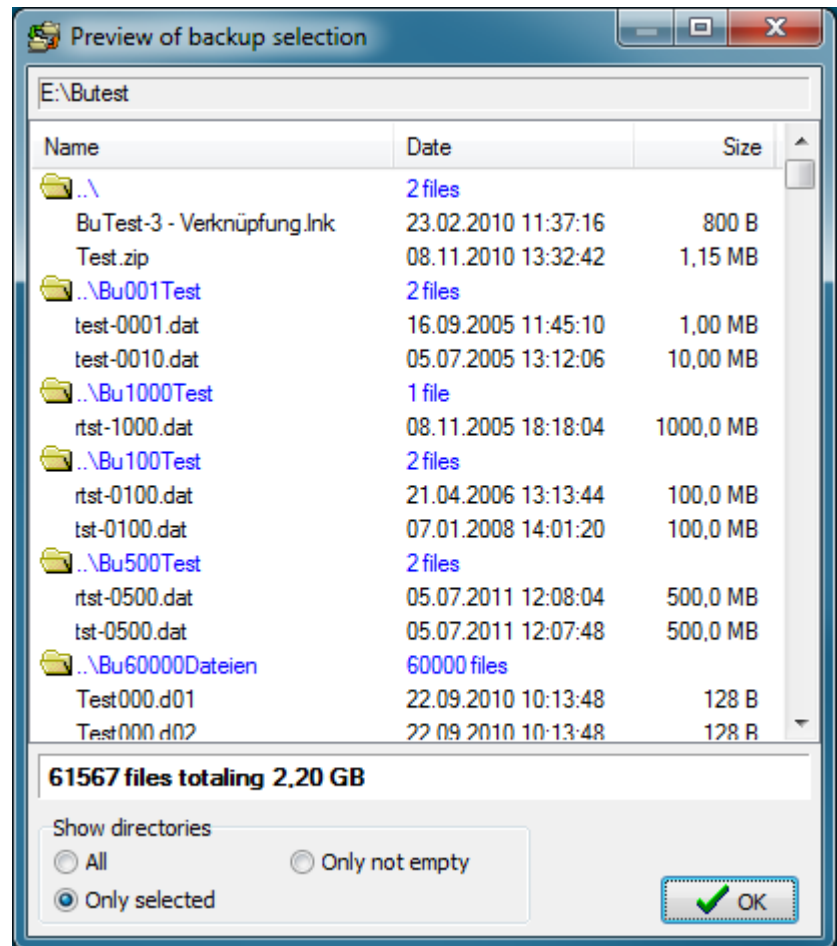
Filter using regular expressions

While their syntax is relatively complex, regular expressions can on the other hand be a very powerful tool. A **brief description** is included in the documentation of this program. For further information, search for literature on the subject. An overview can be found at [Wikipedia](#).

Preview

Clicking the  Preview button will open a window displaying all the files selected for backup. This is particularly useful for checking the correct functioning of **regular expressions**, for example.

This preview can also be called via a context menu displayed on right-clicking



a directory in the *Directories to be backed up* window and selecting the option *Show all selected files*. In this context menu there is also the option to *Show all excluded files*.

Selection by file types

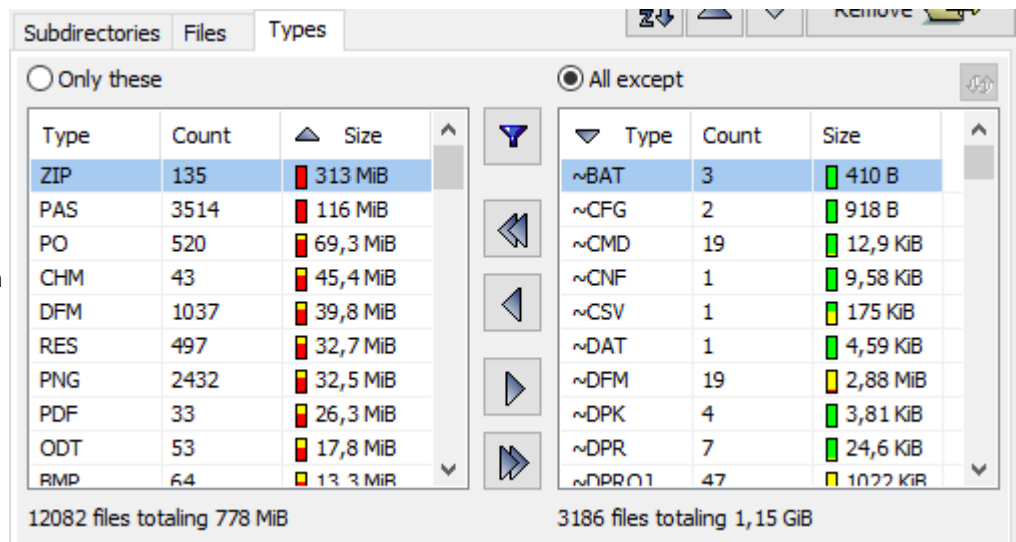
The indicator for file types is the file extension. When configuring your backup, you can select which file types you wish to include and which to exclude from the backup. Initially, with the *All except* radio button checked, all file types found in the currently-selected directory and in all its subdirectories are displayed with their extensions in the list on the left. This means that no files will be excluded

from the backup. Each row of the list shows the number and the total size of all files of this type found in the current directory and its subdirectories. The total size of each file type is visualized as a small bar. **Green** means low values (< 1 kB), **red** large values (> 1 MB).

A click on a column header will change the sort sequence: sorted alphabetically by name, sorted by file count or sorted by total size. A second click on the same column header will cause the list to be displayed in reverse order. The small arrow in the header shows the current selection.

The list on the right shows all types excluded for backup.

Clicking the *Only these* or *All except* radio button establishes what the program is to do during a later backup with



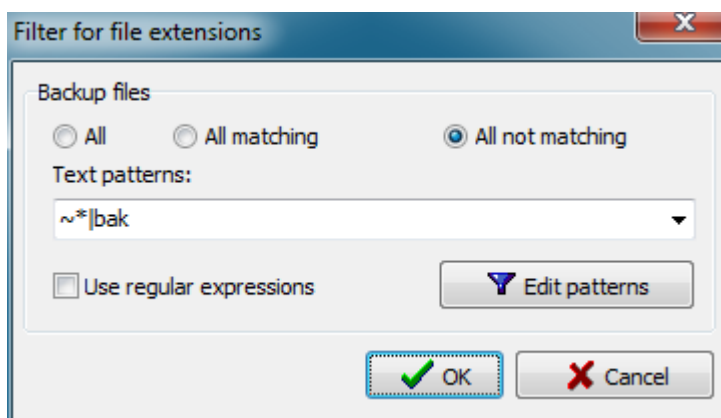
files appearing in the lists:

- **Only these:** new, different file types will not be backed up (only the file types listed on the left)
- **All except:** new, different file types will always be backed up (except file types listed on the right) - default setting

On selecting a directory from the list in the *Directories to be backed up* window, the list of the file types found in that directory and all its subdirectories will always be updated and displayed in the lower windows. Depending on the selected mode they are sorted to the list on the left or that on the right (see above). File types can be moved at will between the two lists:

- By double-clicking on a single type
- By selecting several lines and clicking one of the **arrow buttons**
- Clicking one of the **double arrow buttons** will move all types to the other list

Below the type lists the number of files and the volume of the used disk space for all selected and not selected types inside the directory is displayed.



File type filters

It is possible to select the file types to be backed up using a filter condition. The rules for setting the filter patterns are the same as those described for filenames (**standard filter** and **regular expressions**). You can decide whether the filtered types shall be included or excluded from the backup. If you choose this option, manual file-type selection will be disabled.

Edit file type lists

A list of file types can be stored under a unique name for possible later use with other backup tasks. By means of the following buttons one of several functions can be performed (see screenshot on right):

New

A new file type list will be created from the file types selection of the currently loaded task. Insert a new name and the list will be displayed in the window on the right.

Update

An existing file type list will be updated in accordance with the current selection.

Apply

Use an existing file type list with the currently-selected directory to be backed up.

Delete

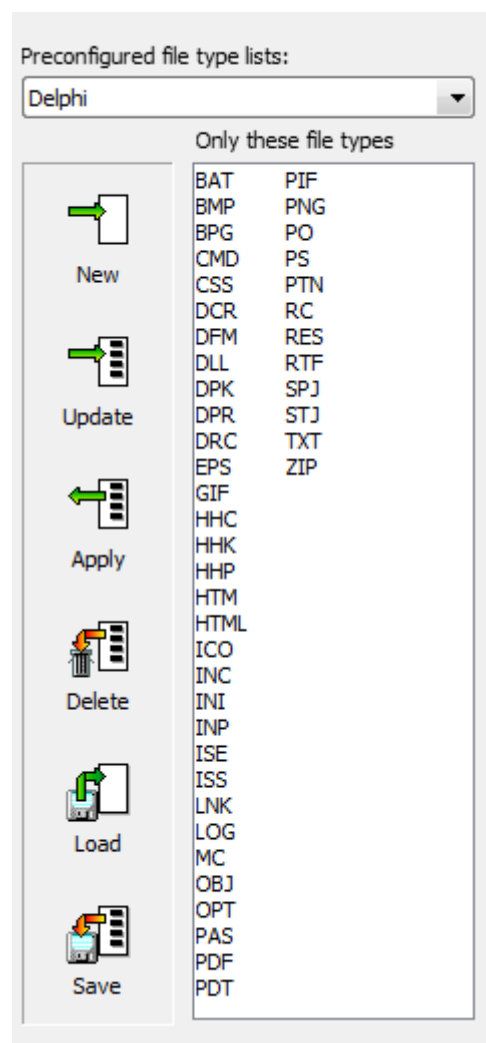
Delete the currently-displayed file type list.

Load

Load a type list from file.

Save

Save a type list to file.



J. Rathlev, 24222 Schwentinental, Germany, August 2020



Personal Backup Version 6

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Backup settings



Click the **Task settings** tab to configure your backup task:

- **Backup into separate files**
 - **Backup modes** and use of archive bit
- **Backup into zip archives**
- **Compression** of files to be backed up
- **Encryption** of files to be backed up
- Using **Volume Shadow copies**
- **Verify** backed-up files
- **Miscellaneous settings:**
 - **Copy creation time**
 - **Copy alternate data streams**
 - **Copy document summary**
 - **Copy file permissions**
 - **Verify copied files**
 - **Delete empty directories at destination**
 - **Delete source files after backup**

Backup into separate files

Directories to be backed up
Task settings
Other options
Log: Long

Backup method

Separate files Zip archive(s)

Separate directories for drives (recommended)

Original full directory structure

Separated by root directory

One directory without full path

File processing

Compress files

as zip

No compression for these types:

7z	lha	pdf
ace	lzh	png
arc	mp3	pptx
arj	mp4	rar
bz2	mpg	xlsx
cab	odg	zip
docx	odp	zipx
gif	ods	
gz	odt	
gze	otp	
jpeg	ots	
jpg	ott	

Backup mode

Update ▼

Archive bit: Use

Comparison settings

Use Volume Shadow Copy service

Miscellaneous

Copy creation time

Copy alternate data streams

Copy document summary

Copy file permissions

Verify copied files

Delete empty directories at destination

Delete source files after backup

Different arrangements for storing your backups are used at the destination. If a schedule has been configured as an **automatic backup**, depending on the cycle a directory named *BDnn* for a daily schedule or *BWnn* for a weekly schedule will be created above the directory structure described below.

Separate directories for drives (default)

In the destination directory, a subdirectory will be created for each source drive from which files are to be backed up. By default for fixed drives these are named *DrvC*, *DrvD*, *DrvE*, etc. If he or she wishes, the user can specify any **other name** (e.g. *C drive*). For backups of directories located in the network, the name of the particular share will be used for these subdirectories, while for backups of directories located on a removable drive, this will be the volume name. Each of these directories will contain the same directory structure as on the original drive.

Original full directory structure

The entire source directory structure is retained at the destination. Only directories on one particular drive can be backed up. If for example you specify X:\ as the destination, it will contain a 1:1 copy of the directory structure selected on the source drive E:\.

Separated by root directory

There will be a separate directory structure at the destination for each selected directory to be backed up ([see here](#)).

One directory without full path

The source path will not be replicated. All files and subdirectories copied from the source will be placed into a single destination path. Possible directory name conflicts will be checked for by the program.

Backup Modes

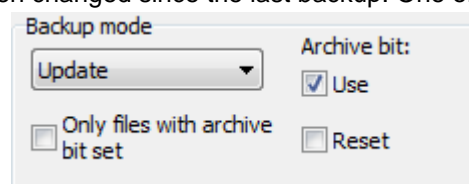
You can select four different backup modes:

- **Update:** This is the default mode. If you are not an experienced user familiar with backup strategies, **you should use this mode**. No files will be deleted from the destination directory (unless the **Synchronize backup directory** option is selected).
- **Comparison of timestamps (default mode):** During backup, the timestamps (date and time of last change) of source and destination files are compared. All previously non-existent files and, depending on the selected **mode**, either
 - (default) all **files with newer timestamps** (i.e. only older files will be overwritten at the destination), or
 - all **files with differing timestamps** (i.e. both older and newer files will be overwritten at the destination)

will be copied to the destination. The time difference to be tolerated and optionally an additional comparison of file sizes can be selected ([see below](#)).

Instead of the timestamp, you can use the archive bit as the criterion for deciding whether a file is to be copied. Every application sets this bit when a file is saved. After successfully copying the file, the program can reset this bit so that it can be detected whether the file has been changed since the last backup. One of two options can be selected:

- **Use the archive bit:** if this option is selected, only files having the archive bit set will be copied. The timestamps will be ignored. Which files will be saved in this case depends on the option **Only files with archive bit set**. If this option is selected, only the files having the archive bit set will be copied (similar to the case with Differential/Incremental). Otherwise also those files are copied that previously did not exist in the destination directory. This mode is similar to the *Comparison of timestamps* mode (see above). The bit remains unchanged unless the option "Reset the archive bit" has been selected.
- **Reset the archive bit:** if this option is selected, the archive bit will be reset by the program on successful backup. On all Windows systems the user needs appropriate administration rights to do this. After backing up, you can use Windows Explorer to check whether the backup was successful for a particular file: on Windows 7, either refer to the Attributes column (if selected for display) or right-click the file, then select "Properties" and the "General" tab on which the file attributes are displayed. When an application changes a file, this bit is set again.



- **Full (new):** Delete the destination directory and copy all files from source. Clear all archive bits.
- **Differential:** Delete the destination directory and copy only those files that have the archive bit set. The archive bits of copied files will not be changed.
- **Incremental:** Delete the destination directory and copy only those files that have the archive bit set. The

archive bits of copied files will be reset.

Important notes:

The **Full**, **Differential** and **Incremental** modes are only available with backups into single files. The destination directory will always be deleted before backup. So they must be used in combination, for example as follows:

1. On the first day, make a full backup to directory A.
2. On subsequent days, make a differential or incremental backup to directories B, C, etc.
3. To restore your data:
 1. Full + differential: restore the last differential backup (e.g. E) and the last full backup (A).
 2. Full + incremental: restore all incremental backups (e.g. E, D, C and B) in reverse order and the last full backup (A).

Already-restored files must not be overwritten during this.

Restoring data from such an alternating schedule becomes very simple with the additional program **PbRestore**. Using this tool, you can automatically restore the latest version of each file relative to a given date.

To prevent loss of data when using the incremental or differential mode, the destination directory will be deleted only if the most recent backup did not occur on the same day.

Using the **Automatic backup** function of the program, you can use preconfigured scheduled backups. To perform such a backup using **Windows task scheduler**, you will have to create several backup tasks which differ in mode (e.g. Full and Differential) and destination directories. Let these tasks run at the desired times (e.g. Full on Monday, Differential on other days - [more information](#)).

The "normal user" might prefer the **Update** mode to be sure that all current versions of all files will be backed up and are retained in the destination directory. Old files no longer existing at the origin will not be deleted from the destination unless the option **synchronize** is selected.

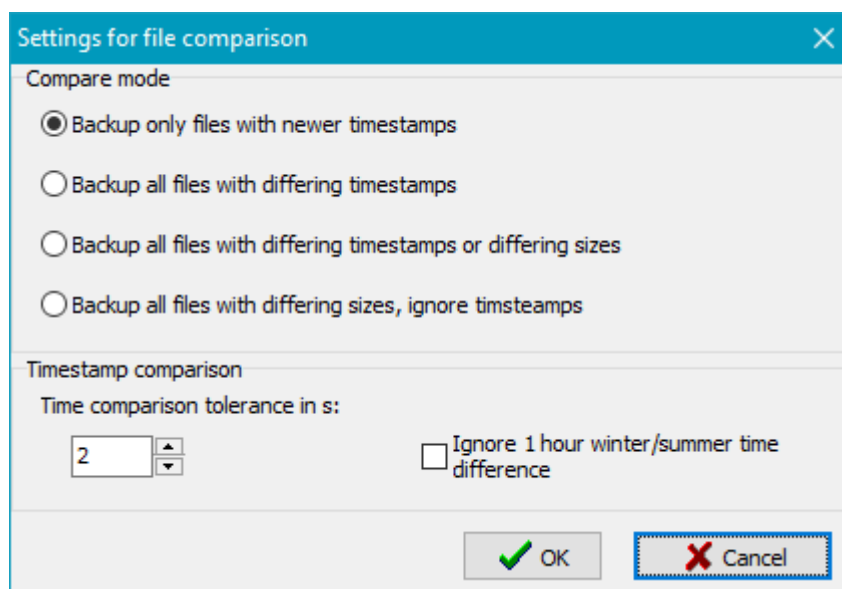
Settings for file comparison

Compare mode: Select which criteria shall be used to decide whether a file is to be backed up or not. Usually (default setting), the timestamps (last write time) of the files are to be compared. For special cases you can select different criteria. The following settings are possible:

- Backup only files with newer timestamps:** All files having a newer timestamp than the one at the destination will be backed up (default). Only older files will be overwritten. Timestamps of source files lying in the future will be changed to the time of the copy. This is necessary because otherwise such files would not be saved after any changes until the (incorrect) future date.
- Backup all files with differing timestamps:** All files with differing timestamps at source and destination will be backed up. Both older and newer files will be overwritten at the destination. Timestamps of source files lying in the future will not be changed.
- Backup all files with differing timestamps or differing sizes:** All files with differing timestamps at source and destination will be backed up (see above). On files with identical timestamps, the program will additionally check if the file size has been changed. If so, also these files will be backed up.
- Backup all files with differing sizes, ignore timestamps:** All files having a differing size at source and destination will be backed up. The timestamp will not be checked.

Size comparison: The two options mentioned above using a size comparison are only available on backups via FTP if neither compression nor encryption is enabled. However, backups to a local or network directory can use these options also in combination with compression and encryption.

Timestamp comparison: Comparing the timestamps of files is problematic when using different file systems (e.g.



FAT32 and NTFS) at source and destination. The timestamps have the following characteristics:

- With **NTFS**: 64-bit value with 100 ns resolution
- With **FAT32**: 16-bit value with 2 s resolution
- With **Samba/Unix**: 32-bit value with 1 s resolution

To be system-independent, a default tolerance of 2 s on time comparison is used by the program. If necessary this tolerance can be adjusted by the user.

A further problem is that **FAT systems** use **local time** whereas the **other systems** use **UTC**, hence when backing up from an NTFS partition to a FAT32 partition, there will be time shifts after changing from normal to daylight saving time. On the first backup after a time change, all files would be copied even if they have not been modified because the local time would be one hour in front, which simulates a change. As a workaround, you can allow a difference of one hour plus tolerance.


Backup into zip archives

The screenshot shows the 'Task settings' tab of a backup utility. The 'Backup method' section has 'Zip archive(s)' selected. The 'File processing' section has 'Compress files' checked. The 'Name of zip file' field contains 'Test-%date%-%minute%' and the 'Maximum size' is set to 'unlimited'. The 'Miscellaneous' section has 'Delete empty directories at destination' checked.

All files into one zip archive

In the root directory of the destination drive, a single zip file (e.g. called *Files.zip*) will be created containing all files to be backed up retaining their original directory structure.

Separated by root directory

For each directory **selected for backup**, a separate zip file is created. Within this zip file, the original directory structure will be preserved. The archive name is derived from the last subdirectory. If a whole drive is specified, the **Drive identifier** will be used instead. A placeholder for date and/or time can be added by clicking the button .

Examples:

Source directory	Zip file	Zip file using placeholder %date%
E:\Data\Dir1	Dir1.zip	Dir1-2019-12-21.zip
E:\Data\Dir2	Dir2.zip	Dir2-2019-12-21.zip
K:\	DrvK.zip	DrvK-2019-12-21.zip

Separated by drive and subdirectory

At the destination, a subdirectory is created for each drive from which files are to be backed up: *DrvC*, *DrvD*, *DrvE*, etc. (see **Separate directories for drives** above). Below these, the original directory structure is preserved. A zip file (e.g. called *Files.zip*) is created in each of these subdirectories containing all files to be backed up from the particular directory.

Separated by subdirectory


As above, but without subdirectories to separate different source drives.

















In all cases, a **maximum size** can be specified (e.g. 250 MB). This will cause the zip archives created during backup to be split into several files of the given size. You can select one of the predefined sizes or enter any other size value (at least 64 KiB) manually, eg. 500 MB. The unit suffixes used must follow the recommendations of the IEEE ([see here](#))

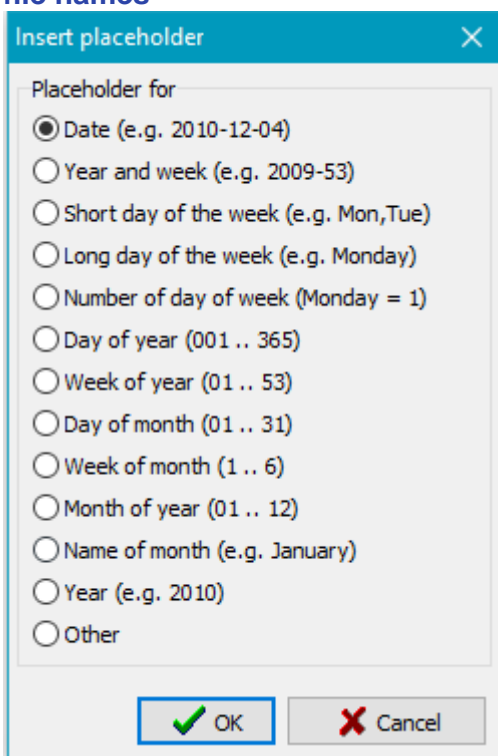
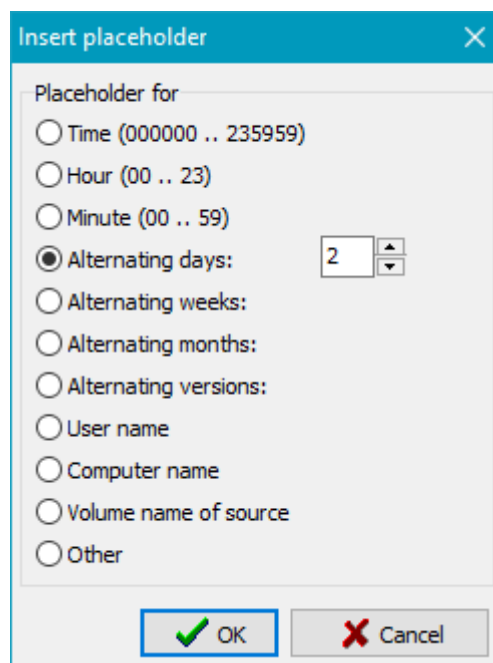
Note: Bear in mind that **zip files will always be created anew** at the start of each backup operation. An already-existing zip file with the same name will be overwritten. There is no comparison of timestamps in this mode (see above under *Update*).

If the **directories to be backed up reside on different drives**, of the above methods only the following are allowed: **Single files + Separate directories for drives** or **Zip files + Separated by drive and subdirectory**. The other methods can produce ambiguous results, so if you wish to use these, you should configure separate backup tasks for each drive.

Placeholders for zip file names

The name of a zip file may contain placeholders which will be replaced with current values on backing up. To insert these, click the  button:

-  **%date%** - Date in the format "yyyy-mm-dd" (e.g. 2010-12-04)
-  **%yaw%** - Year and week in the format "yyyy-ww" (e.g. 2009-53)
-  **%dow%** - Short day of week in the format "Mon, Tue, Wed, Thu, Fri, Sat, Sun"
-  **%ldow%** - Long day of week in the format "Monday, Tuesday, etc."
-  **%dnw%** - Number of day of week (Monday = 1, ..., Sunday = 7)
-  **%day%** - Day of year in the format "ddd" (e.g. 1 = January 1)
-  **%week%** - Week of the year in the format "ww" (i.e. 01 .. 53)
-  **%dom%** - Day of month in the format "dd" (i.e. 01 .. 31)
-  **%wom%** - Week of month in the format "w" (i.e. 1 .. 6)
-  **%month%** - Month of year in the format "mm" (i.e. 01 .. 12)
-  **%lmonth%** - Name of month in the format "January, February, etc."
-  **%year%** - Year in the format "yyyy" (e.g. 2010)
-  **Other** - Will switch to the secondary list at right
-  **%time%** - Time of day in the format "hhmmss" (e.g. 215325)
-  **%hour%** - Hour in the format "hh" (e.g. 17)
-  **%minute%** - Minute in the format "mm" (e.g. 43)

- **%d#n%** - n (= 2..366) Alternating days: inserts the number of the day of the year modulo the specified number n (e.g. %d#2% is replaced by 1 on odd days of the year, by 2 on even days)
- **%w#n%** - n (= 2..53) Alternating weeks: inserts the number of the week of the year modulo the specified number n (e.g. %w#4% is replaced by 1 in the weeks 1,5,9,... of the year, by 2 in the weeks 2,6,10,..., by 3 in the weeks 3,7,11,... and 4 in the weeks 4,8,12,...)
- **%m#n%** - n (= 2..9) Alternating months: inserts the number of the month of the year modulo the specified number n (e.g. %m#3% is replaced by 1 in the months 1,4,7,10, by 2 in the months 2,5,8,11 and by 3 in the months 3,6,9,12)
- **%v#n%** - n (= 2..99) Alternating versions: inserts the number of the backup modulo the specified number n (on each completed backup the number will be increased by one - e.g. %v#3% will be replaced by 1 on 1st, 4th,7th, by 2 on 2nd, 5th, 8th and by 3 on 3rd, 6th, 9th backup)
- **%username%** - Name of the logged-on user
- **%computername%** - Name of the computer
- **%volume%** - Volume name of source (only available if all source directories are on the same drive)
- **Other** - Will switch to the primary list at left

Using the archive bit for backups into zip files


As with single files ([see here](#)) you can also use the archive bit to decide if a file has to be backed up. If the checkbox *Use archive bit* is selected, only files having the archive bit set will be added to the zip file. Optional, the archive bit will be reset thereafter if the appropriate checkbox is selected.

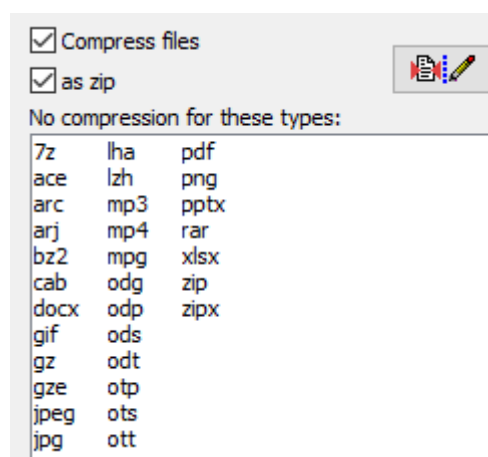
Compressing files

To save space by default, compression with the zip algorithm is used by the program for backing up into single files. File created by using this method are compatible with all standard archive programs (e.g. WinZip and 7-zip) and can also be opened with Windows Explorer.

Alternatively compression can be done into **gz files**.

Many file formats (such as *pdf*, *docx* and *jpg*) are themselves compressed. Compressing these files further saves no noteworthy disk space. Select which file types you do not want to be compressed

in this task by clicking the  button. The default settings can be specified in the dialog called from **Preferences** *Copy ...* in the main menu.



Differences between backing up as zip or gz files:

- **zip files:** Files of types not to be compressed are packed as zip files without compressing again. That means that just the *zip* header and trailer are added to the original file.
- **gz files:** Files of types not to be compressed are copied 1:1.

If necessary (e.g. if you want to have a 1:1 copy of your data) the compression can be disabled completely by deselecting the check box *Compress files*.

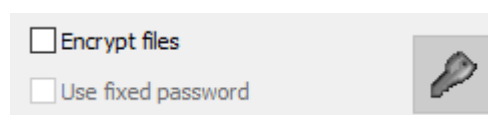
Encrypting files

All files may be encrypted using the Advanced Encryption Standard (AES) method, the algorithms of which are known to be very secure ([more information](#)). You can use it on single files using a **proprietary file format** or on zip files with a **WinZip-compatible file format**.

It is possible to specify a **fixed password** for the encryption. This will be stored as an encrypted string in the task file. For even higher security, you should not use this option but enter the password each time manually when starting the backup.

If using zip files as destination, the encryption depth is adjustable, otherwise it will be determined automatically:

- **Automatically:** The encryption depth is dependent on the pass



word length:

password < 16 characters → 128 bit

password ≥ 16 characters → 256 bit

- **128 bit:** Fixed encryption depth of 128 bit
- **256 bit:** Fixed encryption depth of 256 bit

Encryption of filenames

On backing up to **zip archives**, also filenames and directory names can optionally be encrypted. This will prevent an unauthorized person from deducing information about the contents either from the directory structure or the filenames after opening an archive.

Important note: Such an archive is not fully compatible with the **WinZip format**. It can still be opened with programs like **WinZip** or **7zip**, but the original directory structure will not be displayed. Instead, all files and directories are marked with a sequential hex number. On backup, the real name will be encrypted and stored in an extra field within the local file header. To unpack this, the internal **restore function** or the add-on program **PbRestore** is required to recover the original directory structure. Single files can also be unpacked by applying the password using a program like **WinZip** or **7zip**, but in this case the filename will not be recognizable.

Note: The setting of the encryption depth and the file format for uncompressed and gz-compressed files was changed in version 5.8.5. But restoring of files created by older versions will still be possible.

The screenshot shows a settings dialog for zip file encryption. It includes a text field for the zip file name containing 'Test-%date%' with a help icon to its right. Below it is a dropdown menu for 'Maximum size' set to 'unlimited'. The 'AES encryption depth' section has three radio buttons: 'Automatic' (selected), '128 bit', and '256 bit'. There are three checked checkboxes: 'Encrypt filenames', 'Encrypt files', and 'Use fixed password'. A key icon is located to the right of the 'Use fixed password' checkbox.

Using Volume Shadow copies

Since Windows XP it has been possible to create **Volume Shadow copies** enabling the user to backup on the fly also files that are locked by the system or an application.

Personal Backup supports this method optionally on backups since version 5.7. To benefit from this, the following conditions must be met:

- The program must be started as administrator. It is not sufficient to be logged on with an account having administrative rights. Even in this case the program must be started using the option **Run as administrator**. This is being caused by the protection of the Windows user access control.
- The local drive from which files shall be backed up is formatted in NTFS.
- All directories to be backed up in one task are located on the same drive.
- The operating system is Windows 7 or newer.
- The installed version of Personal Backup must match to the system (i.e. the 32 bit version on a 32 bit system or the 64 bit version on a 64 bit system)

Only if all these conditions are fulfilled, this option will be enabled and can be used for the backup.

Optionally (**see preferences**) during the creation of the Volume Shadow Copy a log can be written into the file **PbVss.log** which is located in the same directory as the *ini* file containing the **program settings**.

In addition, the *Backup Components Document Contents* will always be saved in XML format to the destination directory (refer to the information provided by **Microsoft about VSS**).

Note: The internal restore function of the program does not at present support this procedure. To restore system files, you need to boot e.g. from a CD with **Windows PE** to ensure that the installed system is not running.

Miscellaneous settings

Copy creation time

With the NTFS file system, each file has three timestamps for the date & time: *Created*, *Modified* and *Accessed*. By default, on backing up, the program always copies the date & time *Modified*. Checking the **Select creation time** option will also copy the date & time *Created*.

Copy alternate data streams

The NTFS file system has the capability to link additional data to a file, so called **alternate data streams**. These streams are hidden from the user in the Windows system. You will need a special utility program, such as *Streams* from the **SysInternals package by Microsoft** to examine alternate data streams.

After checking this option, any such alternate data streams will be backed up with each file.

Notes: This option is only available if both source and destination use the NTFS file system and when backing up into uncompressed single files. This option is not available under Windows XP.

Copy document summary

After right-clicking any file in Windows Explorer, under *Properties* you will find the *Details* tab. The information displayed depends from the particular file type. With Word documents, all global information for the document stored with the file are displayed and with JPEG images EXIF data is shown.

With NTFS file systems, there is another possibility for storing information in the file environment (*document summary*). This data is not part of the document and is not normally copied.

To include this, you can select the option **Copy document summary**. This option is, however, only available if the source and the destination uses the NTFS file system and when backing up into uncompressed and unencrypted single files. The FAT32 file system, often used on external drives or USB sticks, does not support this feature.

The user should check for himself whether this copy option is required. Normally it is not necessary either for MS Office documents or for JPEG images because all detail information is stored in the files itself. At the moment, no applications using this NTFS feature are known to the author.

Copy file permissions

In NTFS file systems and network shares, an access control list (ACL) that specifies the permissions for each user is associated with each file and directory. To view and change these permissions, right-click the object, select *Properties* from the menu and the *Security tab*.

If this option is set, the permissions associated with each file and directory will also be copied during backup if both source and destination support this.

Verify copied files

Check this option if you want the program to check the copied file for integrity. Depending on the backup mode, one of the following methods is used:

- **Single files (copied or compressed):** comparison of the CRC32 checksums of the source and destination files
- **Zip archives:** comparison of the zip checksums
- **Encrypted files:** decrypt the copied file and check for integrity

Important note: If this option is enabled, copying of files will be slowed down considerably. The Windows caching will be disabled by the program in this case to ensure that the file is stored completely on the destination data medium before the verification will take place.

Generally it is not necessary to use this option because the security measures applied by the system are quite enough.

Delete empty directories at destination

After backup, the destination will be checked for empty directories. If this option box is checked (default), they will be deleted.

Delete source files after backup

This option will delete source files after a successful backup (**Verify copied files** is switched on by default). You will need this option only in exceptional cases: since the source files are *deleted*, **be very careful** before choosing it!

J. Rathlev, 24222 Schwentimental, Germany, August 2020



Other backup options



Click the **Other options** tab to configure the advanced settings for your backup task:

- **Synchronize** destination and source folders
- Send **mail** after backup
- Use **security copies**
- Execute **external programs** before and/or after backup
- **Miscellaneous options**
 - **Description for task**
 - **Log file**
 - **Processing of filenames**
 - **Junction points**
 - **Copy settings**
 - **Timeout on copying files**
 - **Copy priority and speed**
 - **Timestamp file**
 - **Skip directories**
 - **Scan directories and Power options**
 - **Removable media**

Directories to be backed up
Task settings
Other options
Log: Long

Synchronize backup directory

Off

Before backup After backup

Use Recycle Bin

Security backup of old file versions

During backup

During synchronization

Mail settings

Send mail after backup

External programs

Before backup

After backup

Miscellaneous

- Task description
- Task security
- Log file
- Log settings
- Filename processing
- Junction points
- Copy settings
- Copy time out
- Copy priority
- Transfer speed
- Timestamp file
- Skip directories
- Scan directories
- Power options
- Removable media

Settings for backup log:

Mode:

Off

Short

Long

Verbose

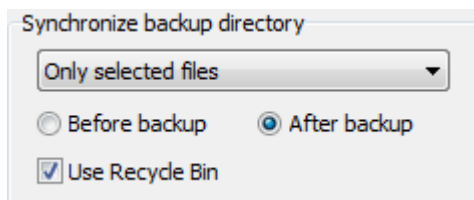
Options:

Show warnings in short log

Print automatically after backup

Error summary

Synchronizing the backup directory



If one of the **Synchronize** options is selected (only available in **Update mode**), source and destination (including all subdirectories) are compared and all files and directories that do not exist (or no longer exist) at the source will be deleted from the backup directory. This ensures that you will have an identical copy of the source at the backup destination.

Synchronizing will not work with *zip files* at the destination, nor with the option *One directory without full path* if more than one source directory is selected for backing up.

Off

No files will be deleted from the destination directory or directories.

All files

All files that no longer exist at the source will be deleted from the destination. Any folders and files excluded from the backup will be also deleted.

Selected files, retain other

Only the files and directories that were selected for backup (see [selection of subdirectories, files and types](#)) will be synchronized. All files which are **not from this selection will remain untouched**.

Selected files, delete other

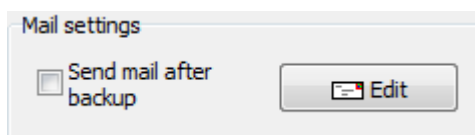
Only the files and directories that were selected for backup (see [selection of subdirectories, files and types](#)) will be synchronized. All files which are **not from this selection will be deleted** (irrespective of their existence at source).

The synchronization can be done alternatively **before** or **after** backing up the files. The second option is recommended because in this case the synchronization will not be started if the backup was canceled.

Important note: Bear in mind that if synchronizing is selected, all files deleted from the source in error by the user will also be removed from the destination on next backing up. To avoid this, you can select one of the following options:

- **Use Recycle Bin:** During synchronization files will not be irrecoverably deleted but moved to the Windows Recycle Bin so that you can recover them if needed. This option is only available if the destination is on a local fixed drive. Notice that this function is only available for files with paths not longer than 260 characters.
- **Security backup on synchronization:** All files missing from the source will not be deleted from the destination but renamed to `<name>.sync.<ext>` or moved to a subdirectory instead. So they can be restored if desired. This option is available also with backups on removable drives (USB), network drives and backups via FTP.

Mail delivery after backup



For monitoring the backup process on a remote computer, the administrator can arrange for a report to be sent by mail. The backup log can be attached (optionally as a zip file). If errors occurred during backup, the mail priority will be set to *high* (*normal* otherwise).

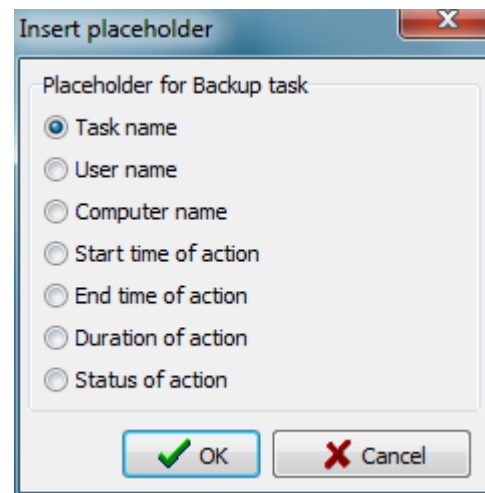
Required settings:

- **SMTP server:** URL of the SMTP server
- **Port:** Port number of the SMTP server (default: 25)
- **Username:** Name of the user account on the SMTP server (if required)
- **Password:** Password for this account
- **Use secure connection:** You can select whether the mail is to be delivered using a secure connection (TLS/SSL):
 - **No:** Logon and mail data will be transferred in plain text
 - **TLS, if available:** Before logon, a **STARTTLS** will be sent. If the server supports secure connections, this will then be used. If not, data will be transferred in the normal way (method: Explicit TLS).
 - **TLS:** Before logon, a **STARTTLS** will be sent. If the server supports secure connections, this will then be used. If not, the connection will fail (method: Explicit TLS).
 - **SSL:** A secure connection will be used on Port 465. If the server does not support this mode, then connection will fail (method: Implicit TLS).
- **Sender:** Mail address of the sender or any other text (in this case, a reply-to address is required).
- **Reply-To address:** Address for replying to the mail (this field can be left empty if a valid mail address is given for *Sender*)
- **Recipients:** The field contains a list of the addresses of all persons who are to receive the report. An address may contain the placeholder *%username%* which will be replaced by the name of the logged-on user on mail delivery.
Use the buttons on the right to add, remove or edit the entries. By checking the boxes to the left of the addresses, you can determine that the recipient concerned (e.g. an administrator) will be notified only of errors during the action performed.
- **Subject:** You can insert a brief text that is to be displayed in the recipient's subject field. Click the  button to insert placeholders into the text (see screenshot):
 - **%taskname%** - Name of the backup task
 - **%username%** - Name of the logged-on user
 - **%computername%** - Name of the computer on which Personal Backup is installed
 - **%start%** - Date and time when the backup started
 - **%end%** - Date and time when the backup ended

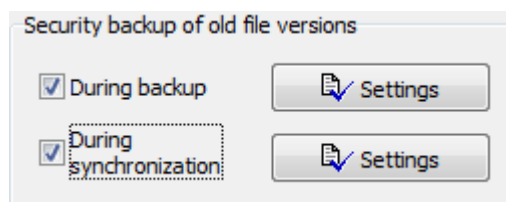
- **%duration%** - Duration of backup in hours:minutes:seconds
- **%status%** - Status of backup (number of files copied, number of errors, etc.)

If nothing is specified in this field, the subject will be set to default: *Personal Backup: Backup on <Date> <Time>*.

- **Attach log file:** Optionally you can add the log file of the backup just performed either always or only if errors occurred as an attachment to the mail. If a long or a verbose log was created, packing it as zip file is recommended. The name of the attachment is assembled from a prefix (default: *PB*) and the date and time when the backup was started. The prefix **can be edited by the user** to help distinguishing between logs from different sources.
- **Other attachments:** If desired, up to 10 additional files can be attached to the mail. for example to send the status information of an **external program**.
- **Send mail after action:** Select whether a mail is to be sent always after each backup to the recipients as specified in the list (also **Restore Verify** and **Clean up**), or only if errors have occurred.
- **Test:** To test the settings, click this button. A test mail will be sent to all selected recipients instantly. If errors occurred, it will be displayed. For a detailed analysis you can view the SMTP communication log. This log is written into the file *PbSmtpl.log* located in the same directory as the other log files ([see here](#)).



Security copies



During Backup

Location for older file versions

If this box is checked, previous file versions at the destination will not be overwritten but renamed and optionally moved into a separate directors. but with a modified name. This name will be the original name with a suffix added in front of the final extension. The following examples illustrate this:

Location for older file versions

The security copies can be archived at different places:

- **Leave in original directory:** Older file versions are renamed as specified (see below) and will remain at their former places.

Security copies during backups

Location for older file versions

Leave in original directory
 Move to subdirectory
 Move to separate directory
 Move to subdirectory in root

Rename older file versions

Filename suffix:

Maximum age of older versions
 weeks
 Set to 0 to retain all older versions

History copies

Maximum number: Minimum number:

For automatic history copies no placeholders are allowed, use a fixed suffix.

- Move to subdirectory:** In each directory a new subdirectory will be created. Its name is assembled from a selectable prefix (as with synchronization) and the fixed identifier *bak* (**Default:** *~bak*). All previous file versions will be renamed using the method described below and will then be moved to this directory during backup. If only one security copy is to be retained, it is possible to omit the suffix. In this case the original filename will be used.
- Move to separate directory:** In the destination directory of each directory to be backed up a subdirectory will be created. Its name is assembled as described above. Below this, an original directory tree will be created to hold the renamed security copies (see above).

Note: This option is not available for backups using FTP.

- Move to subdirectory in root:** In the root directory of the backup a subdirectory will be created. Its name is assembled as described above. Below this, an original directory tree will be created to hold the optionally renamed security copies (see above). If desired, the backup date can be added to the name of the subdirectory (Option: *Separated by backup date*). In this case the security copies

Security copies during backups

Location for older file versions

Leave in original directory
 Move to subdirectory
 Move to separate directory
 Move to subdirectory in root

Directory prefix:

Separated by backup date

Maximum age of backup
 weeks
 Set to 0 to retain all older versions

will retain their original names. That means that during a backup a possibly existing previous file version will be moved to the subdirectory the name of which includes the current backup date (such as *~bak-2020-02-03*). An option to rename these files as described below is not available at this point. This method is also called **reverse incremental**. In addition, you can specify how long previous file versions should be retained (e.g. 1 year = 52 weeks). Older security copies will automatically be deleted on backup to prevent the storage capacity at the destination from growing unduly.

Note: This option is not available for backups using FTP.

Rename older file versions

The new name is derived from the original name by adding a suffix left from the file extension. The following examples will explain this. The options marked with * are only available if the maximum number is set to zero.

- Fixed*:** <filename>.<suffix>.<ext>[.gz].enc]

Only one security copy will be retained, this being the most-recent previous version. A suffix (**default: bak**) will be inserted into the filename.

- With timestamp of file*** : (not available with FTP) <filename>.2011-06-12-12-17.<ext>[.gz|.enc]
Click the left button to insert the appropriate placeholder; A security copy of a previous version will be made during each backup, indicating the date and time of its last modification
- With date of backup*** : <filename>.2011-06-12.<ext>[.gz|.enc]
Click the center button to insert the appropriate placeholder; A security copy of a previous version will be made during each backup, indicating the date it was backed up.
- With time of backup*** : <filename>.13-45-17.<ext>[.gz|.enc]
Click the right button to insert the appropriate placeholder; A security copy of a previous version will be made during each backup, indicating the time it was backed up. If a security copy made on another day at the same time already exists, this will be overwritten.
- A certain number of previous versions:** <filename>.bak-1.<ext>[.gz|.enc], <filename>.bak-2.<ext>[.gz|.enc], ...
Any number of the most recently-made security copies will be retained up to a selected maximum. This option cannot be combined with the above placeholders for timestamp, etc, use a fixed suffix instead. If a maximum age (see below) is selected, you can additionally select a minimum number of older versions that shall be retained in any case (even if they are older as specified).

Maximum age of older versions

Additionally, you can select how long the security copies shall be preserved. Older files will be deleted automatically during backup. If the number of weeks is set to 0, all security copies will be retained irrespective to their age.

Note: When **synchronizing** is enabled, previous versions will be retained only for files still present at the source.

Security copies during synchronization
✕

Location for files and directories to be deleted

Leave in original directory
 Move to subdirectory
 Move to separate directory
 Move to subdirectory in root

Rename directories to be deleted

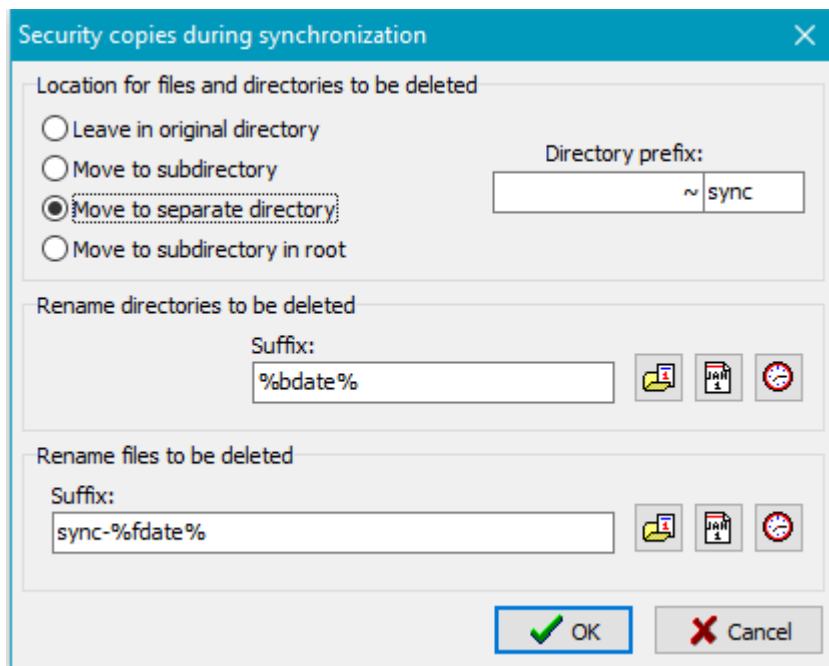
Prefix: Suffix:

Rename files to be deleted

Suffix:

✔ OK

✕ Cancel



During synchronization

If this option is enabled, during synchronization all files and directories that no longer exist at the source will either be renamed and/or moved to another directory instead of being deleted from the destination. It will then be possible to restore files that were deleted from the source in error even after a backup with synchronization.

Location for files and directories to be deleted

The security copies can be archived at different places:

- **Leave in original directory:** All affected files and directories are renamed as specified (see below) and will remain at their former places.
- **Move to subdirectory:** In each directory a new subdirectory will be created. Its name is assembled from a selectable prefix and the fixed identifier *sync* (**Default: `_sync`**). Affected files will be moved to this directory during backup and optionally renamed depending on the settings for the suffix. It is possible to leave the suffix fields blank. In this case the original filenames will be retained.
- **Move to separate directory:** In the destination directory of each directory to be backed up a subdirectory will be created. Its name is assembled as described above. Below this, an original directory tree will be created to hold the renamed security copies (see above).
Note: This option is not available for backups using FTP.
- **Move to subdirectory in root:** In the root directory of the backup a subdirectory will be created. Its name is assembled as described above. Below this, an original directory tree will be created to hold the renamed security copies (see above).
Note: This option is not available for backups using FTP.

Rename directories to be deleted

- With option **Leave in original directory:** The name of the affected directory will be preceded with the prefix (**default: `_`**) and optionally a suffix (see below) will be appended (image at top left).
- With option **Move to another directory:** A new directory will be created at the places described above (**default: `_sync`**). The affected directory will be moved using an optional suffix (see below) to this place. (image at top right)

The suffix may remain blank, may have a fixed value or may additionally contain placeholders for the timestamp of the directory (not available with FTP), the backup date and/or the backup time (refer to **Security copies at Backup**).

Rename files to be deleted

- With option **Leave in original directory:** The affected files will be renamed by inserting a suffix (refer to **Security copies at Backup**) and will remain at their former places. The suffix may be fixed (**default: `sync`**) or may contain placeholders for the timestamp of the file (not available with FTP), the backup date and/or the backup time (refer to **Security copies at Backup**). There are two alternative methods of inserting the suffix:

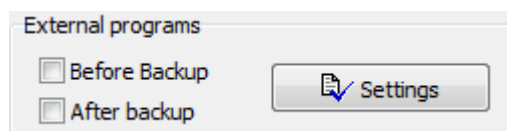
1. The suffix will be inserted into the filename in front of the final extension (`<filename>.<suffix>.<ext>[.gz|.enc]`) such that Windows file type association will remain unaffected.
Example: Using the suffix "sync" will change *MyText.doc* into *MyText.sync.doc*
2. Prefixing the suffix by + sign will cause the suffix to be inserted after the filename extension (`<filename>.<ext>.<suffix>[.gz|.enc]`). Be aware that the Windows file type associations will no longer work in this case.

Example: Using the suffix "sync" will change *MyText.doc* into *MyText.doc.sync*

- With option **Move to another directory**: Renaming is done as described above but the suffix may be left blank. In this case the filename will not be changed when moved.

On **Restore**, **Verify** and **Cleanup**, there are special functions to handle files and directories marked in this way.



Executing an external program before and/or after backup



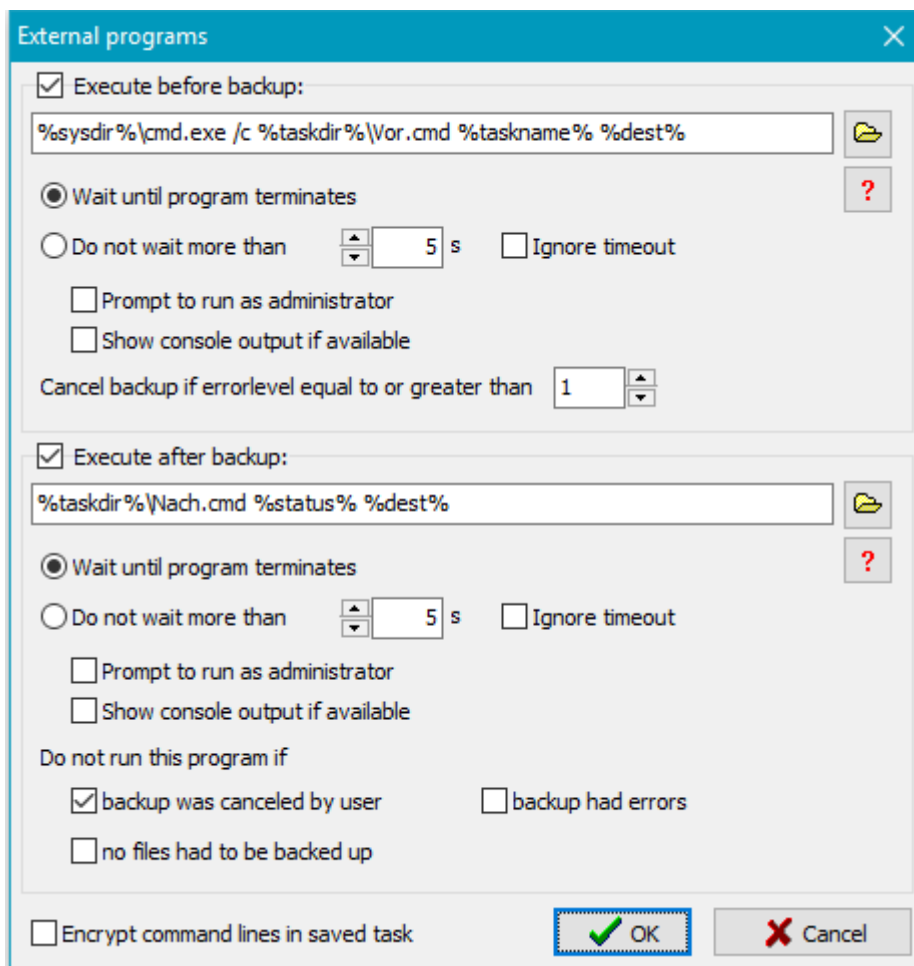
An external program, a batch file, a script or a shortcut can be executed before and/or after each backup. This facility makes it possible during a backup to stop a currently-running service or program that locks its files against access by other applications and then to restart this afterwards (see this [sample script](#) for backing up Outlook files), but many other operations may also be realized in a similar way, such as waking up a server (**WakeOnLan**).

Clicking the **Settings** button will open a dialog box (see screenshot on right) where you can edit the required command lines.

Particular notes on executing scripts: Running batch files (`.cmd` and `.bat`), VB scripts (`.vbs`) or PowerShell scripts (`.ps1`), will only require the script file to be specified. **Personal Backup** will automatically start the associated application. If the full path is not specified, the script file must be located in the same directory as the **backup tasks**. To activate the execution of an external program, first of all check the associated box at the

left. Clicking the  button will open a dialog to select a program, a script or a batch file and insert its path into the command line. By clicking the  button one of the following **placeholders** can be inserted into the command line:

- **%taskname%**: filename of the running backup task
- **%dest%**: destination directory from the task. If the path contains a **volume name** this will be translated into the current drive letter.
- **%zipname%**: name of the zip file (only available if selected as the destination).
- **%sysdir%**: path to the system directory (usually: `C:\Windows\System32`)
- **%taskdir%**: path to **task files**



- **%progpah%**: path to the Personal Backup program installation folder
- **%username%** - name of the logged-on user
- **%password%** - a password the user will be prompted for before starting the external program.
- **%status%**: (only available with external programs *after* backup) error code of preceding backup:
 - 0 = no error
 - 1 = backup task not found
 - 2 = no access to destination directory
 - 3 = source directory not found
 - 4 = other error during backup
 - 5 = backup was canceled by user
- **%<xxx>%**: all **placeholders for date** (%date%,...,%year%), as they are allowed for destination directories, or any **Windows environment variable** (e.g. %TEMP%).

When starting the external program, the placeholders are replaced by the current values. Bear in mind that with automatic backups, the command prompt will be displayed after starting a batch file only when the option for the **status window** is set to *Wait for prompt* or *Wait only on error*.

Important notes: The **application or script to be executed** must be specified with its **full path** (or the appropriate placeholder). If there are **spaces** within its path, the path must without fail be enclosed between **quotation marks**.

Other settings for external programs:

- **Wait until program terminates:** Personal Backup will wait until the external application has terminated before it continues.
- **Do not wait more than *n* s:** Personal Backup will wait until the external application has terminated, but not longer than the specified time in seconds. A timeout will cause the backup not be started unless the option *Ignore timeout* is enabled.
- **Prompt to run as administrator:** To execute some programs, higher permissions than those of a standard user are required. If this option is selected, Personal Backup will check if the user executing the backup has adequate permission, e.g. that of an administrator. If this is not the case, the dialog of the Windows user access control will prompt for elevation.
- **Show console output if available:** If a console application or a batch file is started as an external program, checking this option will display the output of the program, normally shown in the command prompt, in a separate window. This is for example useful for debugging batch files. VB scripts will be started in interactive mode if this option is selected, otherwise in batch mode.
- **Cancel backup if errorlevel equal to or greater than:** An application that has been executed before the backup may return an **ExitCode** (which can, for example, be evaluated in batch files using the command *ErrorLevel*). The backup will only start if this value is less than the preset value (default = 1). Inside a batch script this value can be set to *n* using the command **EXIT /B n**.
- **Do not run this program if ... :** The program to be executed after backup will not be started if at least one the selected conditions applies: the backup was canceled by the user (default: on), there were errors during backup (default: off) or no files had to be backed up (default: off).
- **Encrypt command lines in saved task:** If confidential information (for example a password) is required to call the external application, you should check this option. The information will then not be saved in plain text in the backup task file.

Note: If you want to insert a pause after starting an external application, for example to wait for an external drive to start up, you will need to use a small batch script to call the program *Wait* from the program **utility package**.

Examples: (<path> refers to the path of the specific program or script)

1. To check whether an external drive (e.g. a USB drive) is available and, if applicable, powered up:
 - Insert **<path>\CheckDrive.exe %dest% /p** into then field "**Execute before backup**". (**download the program CheckDrive**).
2. To eject the disk after writing to a CD/DVD in drive **D:**:
 - Insert **<path>\eject.exe D:** into the field **Execute after backup** (**download the program** the program **EJECT** by WebGeek, Inc. - dave@basicguru.com).
3. To delete a temporary folder before or after backup:
 - Insert **cmd.exe /c <path>\deldir.cmd <folder>** into the field. The batch file **deldir.cmd** should contain a

line such as `del C:\temp.`

4. To delete certain files before or after backup:

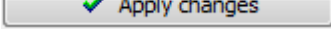
Insert `cmd.exe /c <path>\delfile.cmd <folder>\<mask>` into the field. The batch file `delfile.cmd` should contain a line such as `del C:\Temp*.tmp.`

5. To start a VB script after backup:

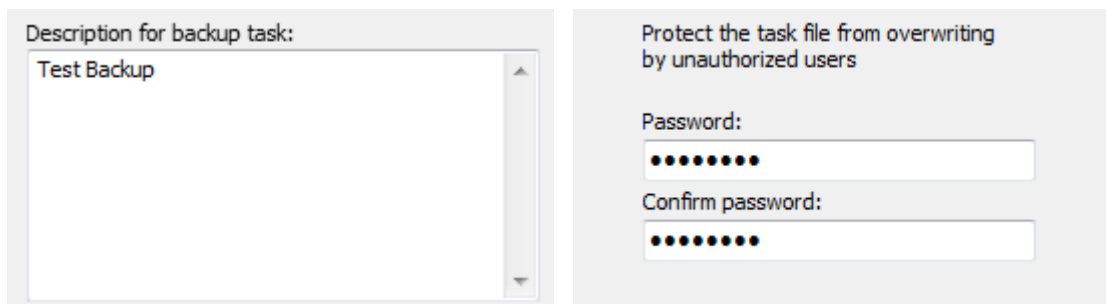
Insert `%sysdir%\cscript.exe <script.vbs>` into the field.

Miscellaneous options

Select the option from the list in the left window. The right-hand window displays the corresponding input screen.

Changes must be confirmed by clicking the  button.

Description for task

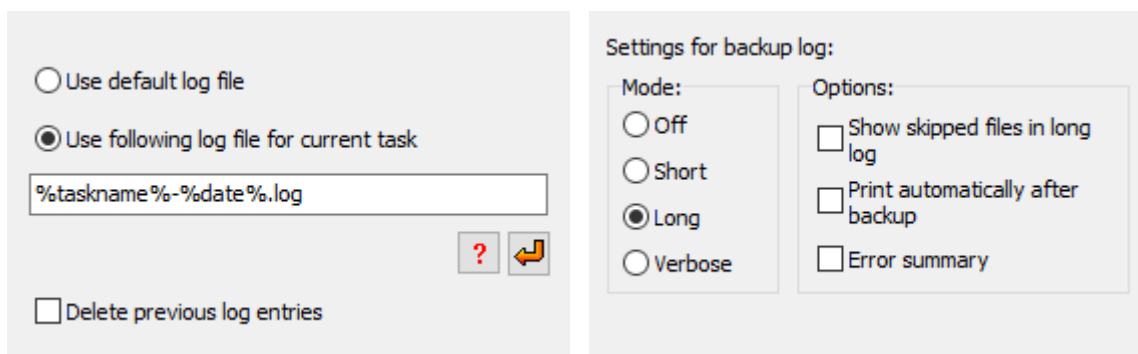


Selecting this option, you can insert multiple lines of description for the backup task. In the main window, this description is displayed as a tooltip when the mouse cursor is placed over the task name. The description is also shown in the [start dialog](#).

Task security

Here, you can protect your backup settings from unauthorized overwrites by specifying a password that must be entered before saving a task. Simply delete this password if you wish to cancel the protection. Before changing or deleting a password, the current password must be entered for corroboration.

Log file



You can select whether the default log file or a specific file is to be used for the currently-opened task.

- **Use default log file:** the log will be written to the default log file used for all tasks ([see ..](#))
- **Use following log file for current task:** you can specify any fixed filename and you may specify a name containing placeholders. On clicking the button with a red arrow, a placeholder for the name of the task, on clicking the button with the question mark placeholders for date and time ([refer to ..](#)) will be inserted. When, for example, the backup task *Test.buj* is executed and the placeholders included in the screenshot above on left are used, a new log file (e.g. *test-2015-04-01*) will be created on each day. In both cases, if a fixed name or a name with a placeholders is used, the log will be appended to an existing file when running a backup.

Delete previous log entries: This option is only available if a particular log file was selected for the task. Before starting the backup, all existing entries will be deleted.

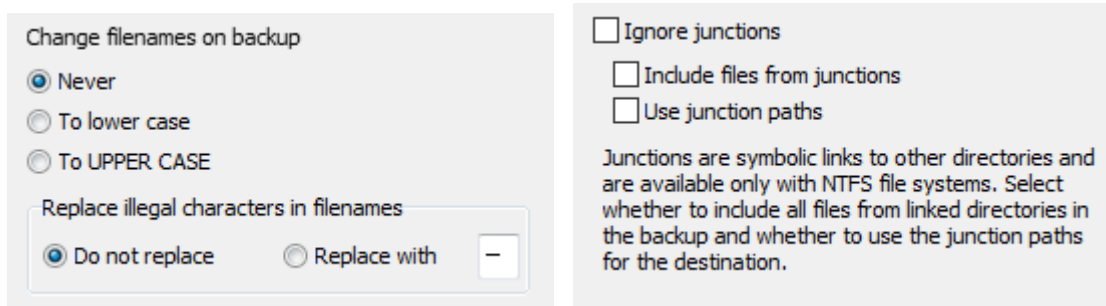
Location of the log file: the directory where the log file is stored can be selected in the dialog called from [Preferences](#) [Directories ...](#) in the main menu. By default the `AppData\Roaming\PersBackup6` directory of the

user is used ([see more](#)).

Log settings

You can adjust the log file settings individually (screenshot above on right) for this backup task ([more details](#)).

Processing of filenames



File and directory names can be changed during copying (screenshot above on left):

- **Never:** Leave all names unchanged
- **To lower case:** Convert names to lower case
- **To UPPER CASE:** Convert names to upper case
- **Replace illegal characters:** Filenames on network resources created by systems other than Windows may contain illegal characters. Select this option to replace such characters with an alternative (default: "-")

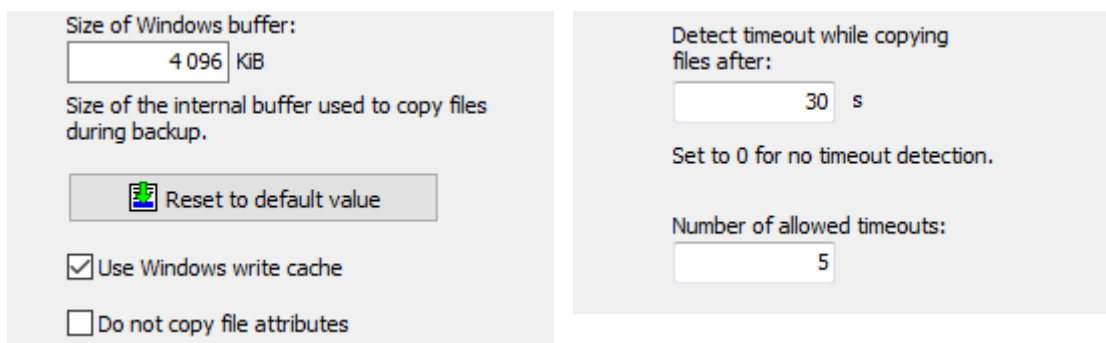
Junction points

Using the NTFS file system, since Windows Vista it has been possible to insert hard links (junctions) to other directories into the file system. To create such a junction, use the console command *MKLINK*. During backup there are four ways to take junctions of subdirectories into account. Refer to the screenshot above on right:

- If *Ignore junctions* is selected, all junctions found during backup will be skipped and no information about is saved with the backup.
- If *neither this nor the other options* are selected, just the information about the junction will be saved at destination in the file *<Name>.pblink*. This file will be used by the program optionally to recreate the junction on restore.
- If only the option *Include files from junctions* is selected, a subdirectory will be created in the current destination directory to hold all files from the linked directory, hence the junction is replaced by a subdirectory.
- If you also check *Use junction paths* (only available for backups into files and separate directories for drives, not for backups via FTP), the files in the linked directories will be saved to a path at the destination that corresponds to the source. The junction itself will be saved at the destination as the file (*<Name>.pblink*) that will be used by the program optionally to recreate the junction on restore.

Note: With junctions, there is the inherent danger of endless recursions, for example when linking to a higher-level directory. The program will recognize and ignore such recursions if possible.

Copy settings



The program uses an **internal buffer** for copying and/or compressing files. The size of this buffer can be set in

multiples of 1 KiB (= 1024 Byte). When using external drives (e.g. USB) you can speed up the copy process by changing the buffer size (screenshot above on left). The default values are 4096 KiB for Windows and 256 KiB for FTP transfers, but experimentation can be worthwhile.

In addition **Windows cache** (system transfer buffer) can optionally be disabled. All files will then be written directly to the storage medium. Using this option the user may have the impression that file copying is slowed down. But in fact copying via the cache is no faster because the system is processing data transfers in the background which is hardly perceptible to the user. However, immunity from system errors will be increased by writing directly to the storage medium.

During backup, all **file and directory attributes** will be copied by default ([more info](#)). However, some NAS systems do not support the Windows specific file attributes. In this case you can disable this function.

Timeout on copying files

To prevent the program from hanging during file copying, for example when the destination is no longer available (as can happen on network connections), timeout monitoring is implemented. The default setting is 60 s, meaning that the backup process of the current file will be terminated if copying a block (see [Copy buffer](#)) takes longer than this. You can increase this time as required (image at top right). To turn timeout monitoring off, set the time to zero (screenshot above on right).

In addition, you can set the number of timeouts to be allowed after which the backup will be aborted outright (Default: 5).

Copy priority



You can adjust the priority of the file copying processes with respect to other applications (screenshot above on left): if you select "Very low", other running processes will be decelerated less than with the "Normal" setting. If you select "High", the file copying processes will be given a higher priority, possibly causing other applications to run more slowly.

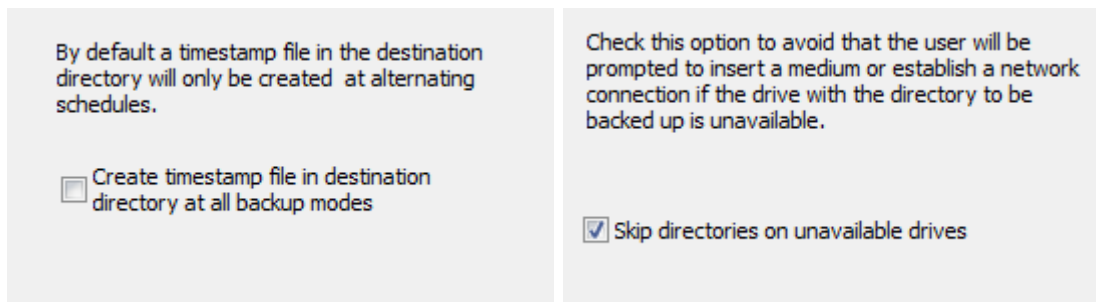
Note: This setting only has an effect if there are other processes running with high CPU usage.

In addition you can select whether Personal Backup has to reduce its CPU usage to provide more CPU time for other processes. For maximum copy speed, this option must be switched off (default setting).

Transfer speed

Sometimes, for example when backing up data via a network connection on a server, it is expedient to limit the data transmission rate. Other accesses to network resources are thereby affected less severely. The value can be specified as maximum transfer speed in kByte/s (screenshot above on right).

Timestamp file



If this option (screenshot above on left) is selected, after every backup a file named *\$timestamp* will be written to the root directory of the destination. It contains an information about the start time of the most recent backup. So

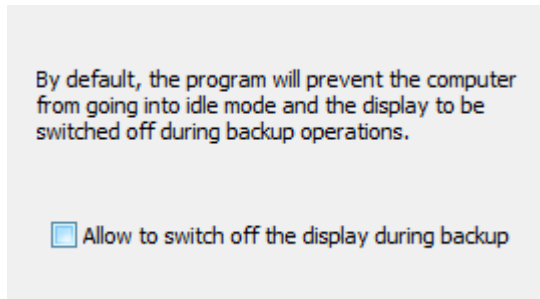
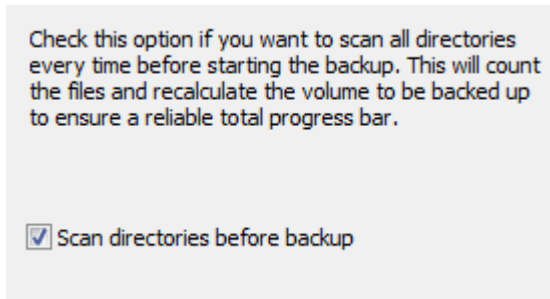
looking at this file, the user can recognize when this was performed. If this option is not selected, the timestamp file will only be created with alternating schedules and the modes *differential* or *incremental* to recognize if there were multiple backups on the same day.

Skip unavailable directories

When backing up a directory located on a removable medium or on a network resource, it can happen that this is unavailable during backup, e.g. if a USB stick is not plugged in. If the backup was started manually or automatically using one of the modes *Wait for prompt* or *Wait only on error*, the user will be prompted to insert the medium.

Select this option (screenshot above on right) if you wish always to skip backing up such a directory. In this case only an appropriate note will be added to the log.

Scan directories

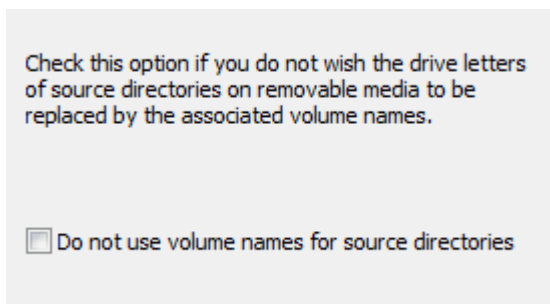


If this option (screenshot above on left) is selected, all directories to be backed up will be scanned every time before the backup is started. Thereby all selected files are counted and their volume is recalculated. This ensures an absolute reliable display of the total progress bar during the following backup. To spare time this option is by default disabled. In this case the progress bar will use the result from the last preceding backup.

Power options

Before starting a backup, the program will by default send a message to the Windows system not to go into idle mode and not to switch off the display until the backup has been finished. By checking this option (screenshot above on right), Windows will be permitted to switch off the display during longer backups.

Removable media



If you want to back up files from a removable drive (e.g. a USB stick) you cannot be certain that the same drive letter will always be assigned. To prevent this, the program normally checks the volume name of the storage medium ([see here](#)). If you do not wish the program to act in this way, you can select this option to force the drive letters to be used every time. In this way you can configure a task to backup the files from any storage medium using a given drive letter, e.g. drive *K:*, registered by the system on connection.



Syntax of Regular Expressions



You can use regular expressions in the program for filtering folder and file names as well as for extensions.

Consider the different default settings:

- **Folder and file names:** filtering is case sensitive.
- **Extensions:** filtering is case insensitive

Using the **modifier (?i)** lets you change this behavior.

Personal Backup 5 implements the **Unicode** version of *TRegExp*.

You will find a detailed description, examples and tutorials at Regular-Expressions.info. A short overview of the syntax is given below.

Introduction

Regular expressions are a widely-used method of specifying patterns of text for which to search. Special **meta-characters** allow you to specify, for instance, that a particular string you are looking for occurs at the beginning or end of a line, or contains **n** recurrences of a certain character.

Regular expressions look ugly for novices, but in reality they are a very simple (well, relatively simple), handy and powerful tool.

Simple matches

Any single character matches itself, unless it is a **meta-character** with a special meaning as **described below**.

A series of characters matches that series of characters, so the pattern *bluh* would match *bluh* in the target string. Quite simple!

You can cause characters that normally function as **meta-characters** or **escape sequences** to be interpreted literally by preceding them with the backslash `\` escape character. For example, the meta-character `^` matches the beginning of a string, but `\^` matches the character `^` and similarly `\\` matches `\` and so on.

Examples:

```
foobar      matches the string foobar
\^FooBarPtr matches the string ^FooBarPtr
```

Escape sequences

Characters may be specified using an **escape sequence** syntax, much like that used in C and Perl, where `\n` matches a new line, `\t` a tab, etc. More generally, `\xnn`, where *nn* is a string of hexadecimal digits, matches the character whose ASCII value is *nn*.

If you need wide (Unicode) character code, you can use `\x{nnnn}`, where *nnnn* is a string of one or more hexadecimal digits.

Code	Description	Equivalence
<code>\xnn</code>	Character with hex code <i>nn</i>	<code>\xnn</code>
<code>\x{nnnn}</code>	Character with hex code <i>nnnn</i> (one byte for plain text and two bytes for Unicode)	
<code>\t</code>	Tabulator (HT/TAB)	<code>\x09</code>
<code>\n</code>	Line feed (LF)	<code>\x0a</code>
<code>\r</code>	Carriage return (CR)	<code>\x0d</code>
<code>\f</code>	Form feed (FF)	<code>\x0c</code>
<code>\a</code>	Alarm (bell) (BEL)	<code>\x07</code>
<code>\e</code>	Escape (ESC)	<code>\x1b</code>

Examples:

`foo\x20bar` matches the string **foo bar** (note the space in the center)

`\tfoobar` matches the string **foobar** predefined by tab

Other characters that need the escape character `\` are brackets `()` and `[]` and, as already mentioned, the backslash itself `\`

Character classes

You can specify a **character class** by enclosing a list of characters in `[]`, which will match **any one** character from the list.

If the first character after the `[` is `^`, the class matches any character **not** in the list.

Examples:

`foob[aeiou]r` finds the strings **foobar**, **foober**, etc. but not **foobbr**, **foobcr**, etc.

`foob[^aeiou]r` finds the strings **foobbr**, **foobcr**, etc. but not **foobar**, **foober**, etc.

Within a list, the `-` character is used to specify a **range**, so that **a-z** represents all characters between **a** and **z**, inclusive.

If you want the `-` character itself to be a member of a class, put it at the start or end of the list, or precede it with the `\` escape character. If you want the `]` character, you may place it at the start of the list or precede it with the `\` escape character.

Examples:

`[-az]` matches **a**, **z** and `-`

`[az-]` matches **a**, **z** and `-`

`[a\-z]` matches **a**, **z** and `-`

`[a-z]` matches all twenty six lower case characters from **a** to **z**

`[\n-\x0D]` matches any of **#10**, **#11**, **#12**, **#13**

`[\d-t]` matches any digit, `-` or **t**

`[]-a]` matches any char from `]` to **a**

Meta-characters

Meta-characters are special characters which are the essence of regular expressions. There are different types of meta-characters, as described below.

Meta-characters - line separators

Code Description

- ^** Start of line
- \$** End of line
- \A** Start of text
- \Z** End of text
- .** Any character in the line

Examples:

`^foobar` matches the string **foobar** only if it occurs at the beginning of the line

`foobar$` matches the string **foobar** only if it occurs at the end of the line

`^foobar$` matches the string **foobar** only if it is the only string in the line

`foob.r` matches strings such as **foobar**, **foobbr**, **foob1r** and so on

By default, the **^** meta-character is only guaranteed to match at the beginning of the input string or text, the **\$** meta-character only at the end. Embedded line separators will not be matched by **^** or **\$**.

You may, however, wish to treat a string as a multi-line buffer, such that the **^** meta-character will match after any line separator within the string, and **\$** will match before any line separator. You can do this by switching on the **modifier /m**.

The **\A** and **\Z** are just like **^** and **\$**, except that they will not match multiple times when the **modifier /m** is in use, whereas **^** and **\$** will match at every internal line separator.

By default, the **.** meta-character matches any character, but if you switch off the **modifier /s**, then the **.** meta-character will not match embedded line separators.

TRegExpr works with line separators as recommended at www.unicode.org:

^ is at the beginning of an input string: if the **modifier /m** is on, the input string will be found when following an occurrence of `\x0D\x0A` or `\x0A` or `\x0D`.

If you are using the **Unicode version** of *TRegExpr*, then also the occurrences of `\x2028` or `\x2029` or `\x0B` or `\x0C` or `\x85` will match.

Note that there is no empty line within the sequence `\x0D\x0A`.

\$ is at the end of an input string: if the **modifier /m** is on, the input string will be found when preceding an occurrence of `\x0D\x0A` or `\x0A` or `\x0D`.

If you are using the **Unicode version** of *TRegExpr*, then also the occurrences of `\x2028` or `\x2029` or `\x0B` or `\x0C` or `\x85` will match.

Note that there is no empty line within the sequence `\x0D\x0A`.

. **matches any character:** if the **modifier /s** is switched off, then `.` does not match `\x0D\x0A` and `\x0A` and `\x0D`.

If you are using the **Unicode version** of *TRegExpr*, then also the occurrences of `\x2028` and `\x2029` and `\x0B` and `\x0C` and `\x85` will not match.

Note that `^.*$` (an empty line pattern) does not match the empty string within the sequence `\x0D\x0A`, but matches the empty string within the sequence `\x0A\x0D`.

Multi-line processing can be easily tuned to suit your own purposes with help of the *TRegExpr* properties

LineSeparators and **LinePairedSeparator**. You can use Unix style separators `\n` only, or DOS/Windows style `\r\n` only, or mix them together (as described above and used by default) or you can define your own line separators!

Meta-characters - predefined classes

Code Description

\w	An alphanumeric character (including "_")
\W	A non-alphanumeric character
\d	A numeric character
\D	A non-numeric character
\s	Any space character (the same as <code>[\t\n\r\f]</code>)
\S	A non-space character

You may use **\w**, **\d** and **\s** within custom **character classes**.

Examples:

```
foob\dr      matches strings such as foob1r, foob6r and so on, but not foobar, foobbr and so on
foob[ \w\s]r matches strings such as foobar, foob r, foobbr and so on, but not foob1r, foob=r and so on
```

TRegExpr uses the properties **SpaceChars** and **WordChars** to define the character classes **\w**, **\W**, **\s** and **\S**, so you can easily redefine them.

Meta-characters - word boundaries

Code Description

\b	Match a word boundary
\B	Match a non-word boundary

A word boundary **\b** is a spot between two characters that has a **\w** on one side of it and a **\W** on the other side of it (in either order), counting the imaginary characters of the beginning and end of the string as matching a **\W**.

Meta-characters - iterators

Any item of a regular expression may be followed by another type of meta-characters, the **iterator**. Using these meta-characters you can specify a number of occurrences of a previous character, of a **meta-character** or of a **sub-expression**.

Code Description

*	Zero or more ("greedy"), similar to <code>{0,}</code>
+	One or more ("greedy"), similar to <code>{1,}</code>
?	Zero or one ("greedy"), similar to <code>{0,1}</code>

{n}	Exactly n times ("greedy")
{n,}	At least n times ("greedy")
{n,m}	At least n but not more than m times ("greedy")
*?	Zero or more ("non-greedy"), similar to $\{0, \}$?
+?	One or more ("non-greedy"), similar to $\{1, \}$?
??	Zero or one ("non-greedy"), similar to $\{0, 1\}$?
{n}?	Exactly n times ("non-greedy")
{n,}?	At least n times ("non-greedy")
{n,m}?	At least n but not more than m times ("non-greedy")

Hence digits in curly brackets in the form $\{n,m\}$ specify the minimum number of times the item n and the maximum m are to be matched. The form $\{n\}$ is equivalent to $\{n,n\}$ and matches exactly n times. The form $\{n, \}$ matches n or more times. There is no limit to the size of n or m , but large numbers will consume more memory and slow down the execution of regular expressions.

If a curly bracket occurs in any other context, it is treated as a regular character.

Examples:

```
foob.*r    matches strings such as foobar, foobalkjdfikj9r and foobr
foob.+r    matches strings such as foobar, foobalkjdfikj9r but not foobr
foob.?r    matches strings such as foobar, foobbr and foobr but not foobalkj9r
fooba{2}r  matches the string foobaar
fooba{2,}r matches strings such as foobaar, foobaaar, foobaaaar etc.
fooba{2,3}r matches strings such as foobaar, or foobaaar but not foobaaaar
```

A little explanation about "greediness": "greedy" takes as many as possible, "non-greedy" takes as few as possible. For example, when applied to the string **abbbbc**:

b+ and **b*** return **bbbb**

b+? returns **b**

b*? returns an empty string

b{2,3}? returns **bb**

b{2,3} returns **bbb**

You can switch all iterators into "non-greedy" mode using the [modifier /g](#).

Meta-characters - alternatives

You can specify a series of [alternatives](#) for a pattern using `|` to separate them, so that **fee|fie|foe** will match any **fee**, **fie**, or **foe** in the target string, as would **f(e|i|o)e**.

The first alternative includes everything from the last pattern delimiter (`,` `[`, or the beginning of the pattern up to the first `|`, while the last alternative contains everything from the last `|` to the next pattern delimiter. For this reason, it is common practice to include alternatives in parentheses, to minimize confusion about where they start and end.

Alternatives are tried from left to right, so the first alternative found for which the entire expression matches, is the one that is chosen. This means that alternatives are not necessarily greedy. For example: when matching **(foo|foot)** against **barefoot**, only the **foo** part will match, as that is the first alternative tried and it successfully matches the target string. This might not seem important, but becomes important when you are capturing matched text using parentheses.

Also remember that `|` is interpreted as a literal within square brackets, so if you write **[fee|fie|foe]** you are really only matching **[feio]**.

Examples:

```
foo(bar|foo) matches the strings foobar or foofoo
```

Meta-characters - sub-expressions

The bracketing construct `(...)` may also be used to define regular expressions sub-expressions. After parsing you can find sub-expression positions, lengths and actual values in `MatchPos`, `MatchLen` and `Match` properties of `TRegExpr`, and substitute these in template strings using `TRegExpr.Substitute`.

Sub-expressions are numbered based on the left to right order of their opening parenthesis.

The first sub-expression has the number **1** (the whole regular expressions match has the number **0** - you can

substitute this by using the Replace directive <R> by **\$0** or **\$&**).

Examples:

```
(foobar){8,10} matches strings which contain 8, 9 or 10 instances of the foobar
foob([0-9]|a+)r matches foob0r, foob1r, foobar, foobaar, foobaar etc.
```

Meta-characters - back-references

Meta-characters \1 through \9 are interpreted as backreferences; \<n> matches the previously-matched **sub-expression** #<n>.

Examples:

```
(.)\1+ matches aaaa and cc
(.\+)\1+ also matches abab and 123123
(['"]?)(\d+)\1 matches "13" (in double quotes), '4' (in single quotes), or 77 (without quotes), etc.
```

Modifiers

Modifiers are for changing the behavior of *TRegExpr*.

There are many ways to set up modifiers. Any modifier may be embedded within the regular expression itself using the **(?...)** construct.

Also, you can assign them to appropriate *TRegExpr* properties (a modifier for example to change *Ix*, or *ModifierStr* to change all modifiers together). The default values for new instances of *TRegExpr* objects are defined in *global variables*, for example the global variable *RegExprModifierX* defines the property value *ModifierX* of a new *TRegExpr* instance.

i

Perform case-insensitive pattern matching (for use when installed in your system locale settings). See also *InvertCase*.

m

Treat a string as multiple lines. That is, change **^** and **\$** from matching only at the very start or the end of the string to matching at the start or the end of any line anywhere within the string. See also [Line Separators](#).

s

Treat a string as a single line. That is, change **.** to match any character whatsoever, even a line separator (see also [Line Separators](#)), which it would normally not match.

g

A non-standard modifier. By default this modifier is on. Switching it off will switch all subsequent operators into non-greedy mode. In this case, **+** works as **+?**, ***** as ***?** and so on

x

Extend the legibility of your pattern by permitting whitespaces and comments (see explanation below).

r

Non-standard modifier. Its behavior depends on whether *TRegExpr* supports Unicode or not.

Personal Backup uses the **Unicode version** therefore if this modifier is set, the range **a-я** includes **ё**, **A-Я** includes **Ё** and **A-я** all Cyrillic characters used in Russian.

Note: The plain text version uses the **Windows-1251 code table** (not ISO-8859-5), hence the the range **à-ÿ** (= 0xE0..0xFF) includes **¸** (= 0xB8), **À-ß** (= 0xC0..0xDF) includes **ˆ** (= 0xA8) and **à-ß** (= 0xC0..0xFF) includes all Russian symbols.

In contrast to the original version of *TRegExpr*, in Personal Backup this modifier is **not set by default**.

The modifier **(?x)** itself needs a little more explanation. It tells *TRegExpr* to ignore a whitespace character that is neither backslashed nor within a character class. You can use this to break up your regular expression into (slightly) more readable parts. The **#** character is also treated as a meta-character introducing a comment, for example:

Example:

```
( (abc) # comment
  |    # You can use spaces to format regular expressions - TRegExpr will ignore
  them
  (efg) # comment 2 )
```

This also means that, if you wish to use real whitespace or **#** characters in the pattern (outside a character class,

where they are unaffected by `/x`), then you must either use an escape character or encode them using octal or hex escape characters. Taken together, these features go a long way towards making regular expressions text more readable.

Examples:

<code>(?i)Saint-Petersburg</code>	matches <i>Saint-petersburg</i> and <i>Saint-Petersburg</i>
<code>(?i)Saint-(?-i)Petersburg</code>	matches <i>Saint-Petersburg</i> , but not <i>Saint-petersburg</i>
<code>(?i)(Saint-)?Petersburg</code>	matches <i>Saint-petersburg</i> and <i>saint-petersburg</i>
<code>((?i)Saint-)?Petersburg</code>	matches <i>saint-Petersburg</i> , but not <i>saint-petersburg</i>

Miscellaneous

(?#text)

A comment, the text is ignored. Note that `TRegExpr` closes the comment as soon as it sees a the character `)`, so there is no way to put a literal character `)` into the comment.

J. Rathlev, 24222 Schwentimental, Germany, January 2020



Log file



If you so wish, Personal Backup can maintain a log file of all actions. The basic settings for logging are made in the **dialog** called from **Preferences** **Log ...** in the Control Panel menu. In addition to the preferred log mode you can adjust at this point if a log shall be written not only during **backup** but also during **restore**, **clean up** and/or **verification**.

These settings will be used for each new backup task. An **individual adjustment for each task** can be made by clicking the log status label at the upper right of the **Control panel** (see below for details). In the dialog for editing the backup task you will find the settings under **task options**.

If there will occur errors during a backup or during the other actions, you can look into the log file to find out which files caused the problems. The long and especially the verbose mode will contain a great deal of additional information (e.g. about system errors) and can be used for debugging purposes.

As new logs are added to existing entries, the log files will grow ever larger. The size of these files can be limited under **Log settings**. On reaching the selected size, the program will rename the current log using the current date (PersBackup yyyy-mm-dd.log) and continue with a new, initially empty, log file. As a result of this, the number of log files will grow over time. To prevent this, the program contains a facility for the manual or automatic deletion of old log files no longer needed ([see here](#)).

Log settings

One of the following log modes can be selected depending on the data you wish to be included:

Short:

- Date and time of backup
- Destination directories
- Error notifications (optionally with warnings)
- Backup status with the number of files copied, deleted and checked

Long:

- As for Short log
- List of all files copied on backup and all files deleted on synchronization
- Display of errors and warnings
- Detailed error information
- Additional information for copied files: A succeeding *A* indicates that the attribute of the source file was reset (e.g. during incremental backups), a succeeding *U* indicates that an older file version was overwritten at the destination.

Verbose:

- As for Long, but with much additional information, such as timestamps, attributes, skipped files (useful only for debugging purposes). Besides, the log will always be written completely even if the program hangs or has been terminated.

Note: the log file can grow very large and will slightly slow down the backup.

Options

- **Short log:** Optionally, warnings can be written to this log. They are generated when the backup copy succeeded but changing the attributes and/or timestamp failed at destination.
- **Long log:** Optionally, also displayed are all files in the log that were not copied in the **Update backup mode** because they were up to date at the destination.
- Optionally, an **automatic printout** of the log file can be made to the **selected printer** after each backup.
- Optionally, an **error summary** can be added at the end of a long or verbose log.

Name of the log file

- **Use default log file:** the log will be written to the default log file *PersBackup.log*.
- **Use following log file for current task:** you can specify any fixed filename, optionally containing a full path and/or placeholders. On clicking the red arrow button, a placeholder for the name of the task will be taken as the name for the log. In addition, on clicking the question mark button, other placeholders can be inserted, such as for the date and/or time. In the screenshot above, for example, placeholders for the task name and the current date are used.

In all cases, if a fixed name or a name with placeholders is used, the log will be appended to an existing file when running a backup.

Delete previous log entries: This option is only available if a particular log file was selected for the task. Before starting the backup, all existing entries will be deleted.

Placeholders for log file name

The following placeholders can be inserted into the name or path of the log file:

- **%date%** - current date in the format "yyyy-mm-dd" (e.g. 2010-12-04)
- **%time%** - time of day in the format "hmmss" (e.g. 215325)
- **%yaw%** - year and week in the format "yyyy-ww" (e.g. 2009-53)
- **%yam%** - year and month in the format "yyyy-mm" (e.g. 2009-07)
- **%year%** - current year in the format "yyyy" (e.g. 2010)
- **%username%** - name of the logged-on user
- **%computername%** - name of the computer
- **%dest%** - destination path of backup (e.g. F:\Backup)
- **%drive%** - name of destination drive (e.g. F:) or name of server share (e.g. \\server\backup)
- **%volume%** - volume name of destination drive
- **%taskname%** - name of task

X

Placeholder for

Date (e.g. 2010-12-04)

Time (000000 .. 235959)

Year and week (e.g. 2009-53)

Year and month (e.g. 2019-07)

Year (e.g. 2010)

User name

Computer name

Destination path

Drive of destination

Volume name of destination

Location of the log file

If the name of the specified log file (see above) contains no full path, the log is written to the directory specified for this purpose. The user can either select a particular directory using the main menu item **Preferences**

Directories... or use the default directory located beneath the user's application data: **C:\Users*username*\AppData\Roaming\PersBackup6**.

Sending the log by mail

Using the **task options** you can arrange for a mail notification to be sent after backup to one or more recipients. The log file of the last backup can be attached.



Viewing the log file

After clicking this button or the menu item **Actions Log View**, a viewer window will open and shows the log file belonging to the current opened backup task. Clicking the appropriate button will print out or delete the log file. Additionally, you can search for the beginning of a backup section (*blue arrows*), backup errors (*red arrows*) or any other text. To copy text to the clipboard, no text selection is required for the whole text. For part of the text, select a section and type Ctrl+C or Ctrl+Ins on your keyboard.

To print only part of the log, the desired text should be selected using the mouse or keyboard. If nothing is selected, the whole log will be printed out.

Personal Backup - 32-bit (Version 6.0.1) [C:\Users\ \AppData\Roaming\PersBackup6\test-sync.log]

Open Print Search Close

```

Status: Keine Dateien gelöscht
==> Ende: 20.12.2018 22:52:21 - Backup-Auftrag: test-sync.buj (S)
Status: OK - Verstrichene Zeit: 00:00:03
Datensicherung: 65 von 69 Dateien kopiert (1,59 MiB von 1,90 MiB)
Synchronisation: Keine Dateien gelöscht

Personal Backup - 32-bit (Version 6.0.1.1) [02] - Data backup
Operating system: Windows 10 Professional (Version 1803, Build 17134, 64-bit Edition)
==> Start: 20.12.2018 22:55:49 - Backup task: test-sync.buj (S)
Computer: BUERO
Method: Separate files - Separated by root directory
Settings: Compress files as zip
          Delete empty directories at destination
Options: Synchronize: Selected files, retain other
Destination volume: Backup - 232,28 GiB free of 886,45 GiB
File system: NTFS
User name: Jürgen
Backup mode: Update to G:\Test\sync
1st Directory:
Source: E:\Butest\BuTest-Sync\
Dest.: G:\Test\sync\BuTest-Sync
-> Data backup
   Status: No files copied
-> Synchronize: G:\Test\sync\BuTest-Sync
   Status: No files deleted
2nd Directory:
Source: E:\Butest\BuTest-Sync-1\
Dest.: G:\Test\sync\BuTest-Sync-1
-> Data backup
   Copied: "#Ordner 2\CheckDir.res.res" (46,3%)
   Copied: "#Ordner 2\index.html" (23,7%)

```

Line: 218 of 218

Shortcuts used in the log files

The following shortcuts are used in the log files to give the user some additional information.

Header

```

Personal Backup (Version 6.1.3) [nn] - Data backup
==> Start: 25.07.2017 12:48:36 - Backup task: <Task>.buj (x)
nn = log mode: 01 - short, 02 - long, 03 - verbose, 05 = short with warnings
x = Backup mode: no = update, S = update with synchronization, F = full, D = differential, I = incremental

```

Long and verbose log

...

```
Copied: "<file path rel. to source>" (n%) Destination file does not exist
Copied: "<file path rel. to source>" (A - n%) Destination file does not exist
Archive bit was reset
Copied: "<file path rel. to source>" (U - n%) Destination file was replaced
Copied: "<file path rel. to source>" (A,U - n%) Destination file was replaced
Archive bit was reset
```

...

n = Size of the compressed file relative to original

Verbose log

...

```
copying of "<file path rel. to source> (<size>) to <dest. file> [xxx]
```

...

```
compressing of "<file path rel. to source> (<size>) to <dest. file> [xxx]
```

...

```
compressing and encrypting of "<file path rel. to source> (<size>) to <dest. file> [xxx]
```

...

xxx = Selected options:

N - copy, C - compress, E - encrypt

additional: V - verify, T = copy creation time, A - copy alternate data streams, S - copy document summary, P - copy permissions, X - no copy of file attributes

Details of comparison of source destination:

```
-a-- 2010-09-22 10:13:47 -> not present          new copy
-a-- 2014-12-18 17:34:52 -> 2014-11-12 19:33:14  update
-a-- 2004-12-18 17:34:52 <-> 2004-12-18 17:34:54  identical - no copy
```

↑↑↑↑ **Attributes:**

```
r--- read-only
```

```
-a-- archive
```

```
--h- hidden
```

```
---s system
```

J. Rathlev, 24222 Schwentimental, Germany, September 2020



Personal Backup Version 6





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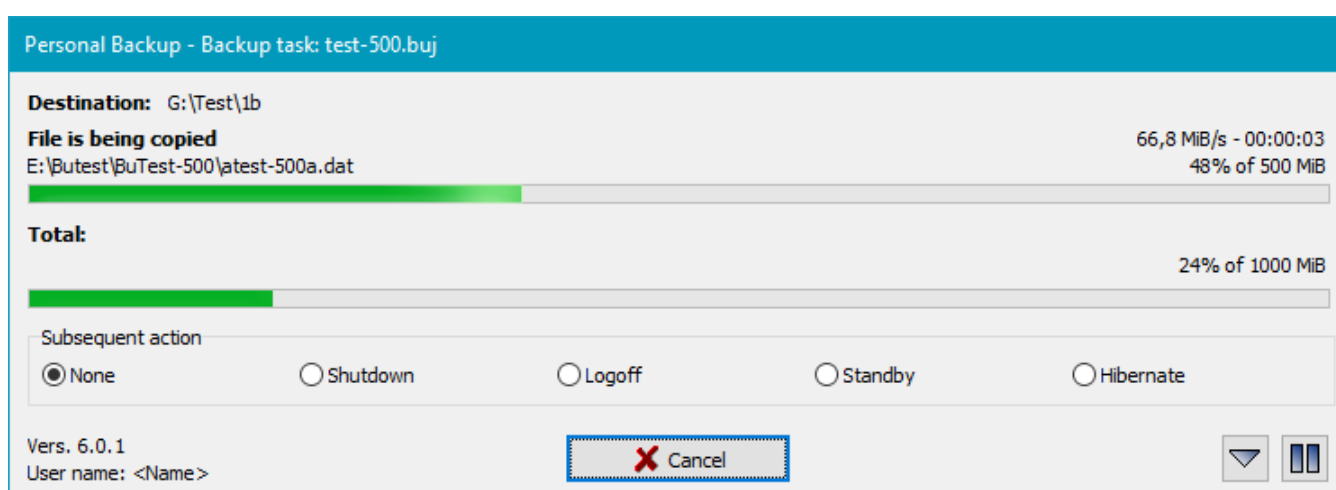
Start backup immediately



After clicking the start button on the [control panel](#) or in the [dialog for editing a backup task](#), the **selected backup task** will be executed immediately. On the screen, a window will appear displaying the status of the running backup. At the top the destination directory to which the files are copied is displayed, below the current action and the file that is being processed. The top bar shows the progress of the processing of a single file, the lower the total progress. Depending on the [program setting](#), it will show the number or the volume of the copied files.

To cancel the backup, click the *Cancel* button. To pause the backup, click the  button (which will then become the  button). On clicking the  button, the backup will resume and the button will revert to its  state.

The  button can be clicked to minimize all windows of the program. To restore the program windows, click the program icon in the taskbar notification area.



Personal Backup - Backup task: test-500.buj




Destination: G:\Test\1b

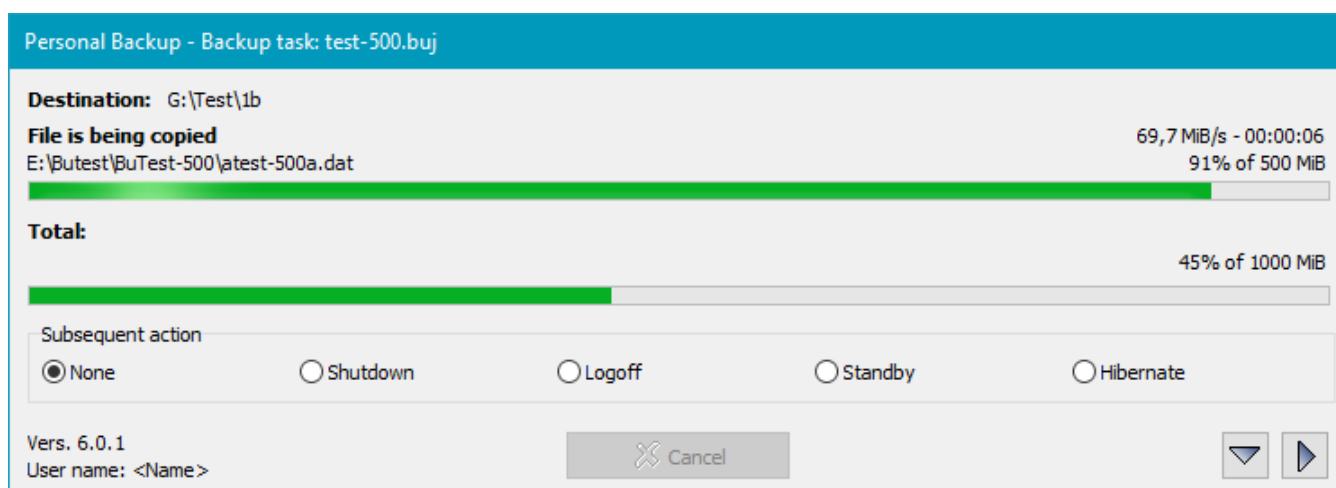
File is being copied 66,8 MiB/s - 00:00:03
E:\Butest\BuTest-500\atest-500a.dat 48% of 500 MiB

Total: 24% of 1000 MiB

Subsequent action
 None Shutdown Logoff Standby Hibernate

Vers. 6.0.1
User name: <Name>



Personal Backup - Backup task: test-500.buj




Destination: G:\Test\1b

File is being copied 69,7 MiB/s - 00:00:06
E:\Butest\BuTest-500\atest-500a.dat 91% of 500 MiB

Total: 45% of 1000 MiB

Subsequent action
 None Shutdown Logoff Standby Hibernate

Vers. 6.0.1
User name: <Name>

When the backup is finished, the window will indicate how many files have been copied and how many errors (if any) occurred. The window can be closed either automatically (see [Options](#) on automatic backup) or manually by clicking the *Done* button. In the example below, 2 of 71 files were copied. This means that 69 files from the source directory had not been changed since last backup and so did not need to be backed up. Clicking the Log button will close the status window and then open the current log file.

Action after backup: When starting a backup [manually](#) or via the [command line](#), you can arrange beforehand for a subsequent action to take place: **Shutdown, Logoff, Standby or Hibernate**. This is very useful when a backup will take a long time to complete and you cannot wait for it to end to switch off the computer.

When starting a backup via the [command line](#), the [subsequent action](#) defined in the command line will be displayed and can be modified during backup if desired.

Should **errors** occur during the backup, a **check box for repeating** the backup will be displayed. Enabling this option will cause the backup to restart immediately on closing the status window.

Note: This option is not available with **automatic backups**.

Personal Backup - Backup task: test-500.buj

Destination: G:\Test\1b

Backup completed 21,2 MiB/s - 00:01:34
100% of 500 MiB

Status: 2 of 2 files copied (1000 MiB of 1000 MiB) 100% of 1000 MiB

Subsequent action

None Shutdown Logoff Standby Hibernate

Vers. 6.0.1

User name: <Name>

J. Rathlev, 24222 Schwentinental, Germany, January 2020



Personal Backup Version 6

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Creating a shortcut on the desktop

To start backups in a quick way, you can create shortcuts on the computer desktop.

Depending from where the dialog was opened, one or several tasks can be registered:

- From **Configure backup tasks**: The currently-loaded backup task will be registered.
- From **Control panel**: All tasks selected from *My backup tasks* will be registered.

Double-clicking the desktop shortcut will start these tasks one after another or optionally in parallel.

Only one task selected: If only one task was selected (image at top right), the field *Tasks to be executed* shows the full path of the selected task. In addition, you have the option to replace it by an automatic task ([see below](#)).

Multiple tasks selected: If more than one task were selected (image at lower right,) the field *Tasks to be executed* shows only an according hint for clarity's sake. Moving the mouse over this field, a list of all selected tasks will be displayed as hint. In addition, you have the option to run the tasks not one after another but in parallel.

Other options: In addition, the dialog will allow you to edit the name of the shortcut, specify the behavior of the status window and define an action to be performed after backup ([see also](#)). If this action should not be changed by the user during backup, you can inhibit this by deselecting the relevant option. In addition, you can specify that the Windows User Access Control will start the backup **as an administrator** (e.g. to use **Volume Shadow Copies**).

Possible subsequent actions

- Standby:** The system is put into standby mode: data remains in RAM but is not saved. In this mode, system wake up is quick, but data will be lost on power failure.
- Hibernate:** The system is put into hibernate mode: RAM data is saved to disk. In this mode, system wake up takes longer, but no data will be lost on power failure.
- Logoff:** The current user will be logged off.
- Restart:** The system will be shut down and restarted automatically.
- Power-off:** The system will be shut down and the computer switched off. This will only function if the user is logged on interactively.
- Hybrid shutdown:** The system will be shut down and the computer will be put into hybrid sleep mode (available since Windows 8). This will only function if the user is logged on interactively.
- Shutdown:** The system will be shut down and the computer switched off. This will even function if the user executing the program is not logged on interactively (e.g. on locked screen).

Action handling on errors

If an action has been selected to be executed after a

backup, this can be modified by clicking the *Action handling on errors* button, such that this action will not be carried out if a backup error occurred. The dialog makes it possible to choose on which errors this shall happen.

Status window

You can select whether the progress window during backup shall be suppressed and how the status window after backup is to be displayed ([see more](#)).

Other options

- **Action changeable by user:** If this option is selected, the choices for a subsequent action (e.g, *Shutdown*) will be displayed in the progress window during backup ([see more](#)).
- **No splash screen:** The splash screen showing the program version will not be displayed ([see more](#)).
- **Run as administrator:** On program start the *Windows User Access Control* will prompt for an elevation of user privileges. This is required for example to use **Volume Shadow Copies**.

Shortcut to start automatic backups

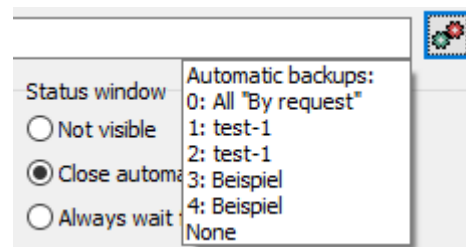
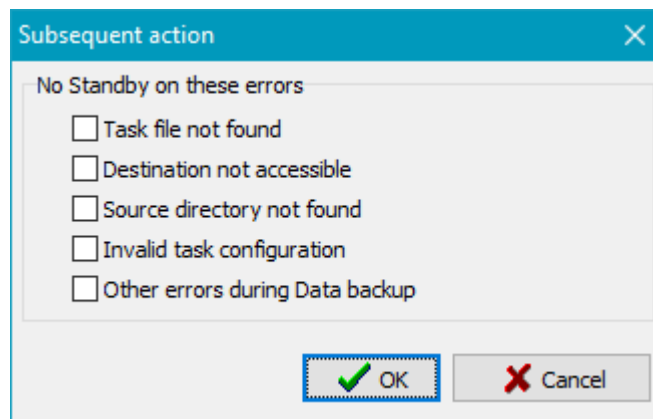
Click the small upper right button to display a list of all configured **automatic tasks**. Select a **configured task** or all automatic tasks scheduled as *By request* to be started by the Desktop shortcut. The setting for a subsequent action is made as described above. Notice that in this case this action cannot be changed later during the backup. If an alternating schedule was configured for this automatic backup, this will be performed respective to the current date.

Example: In this way it possible to realize a backup with alternating schedule with subsequent standby. The user just has to click the so created Desktop shortcut.

Using the shortcut

By double-clicking the desktop shortcut, created in this way, you can start a backup and optionally, for example, put the computer into hibernation afterwards.

To **start several backups** from a desktop shortcut, use the button on the **Control panel** or the **actions menu** to configure.





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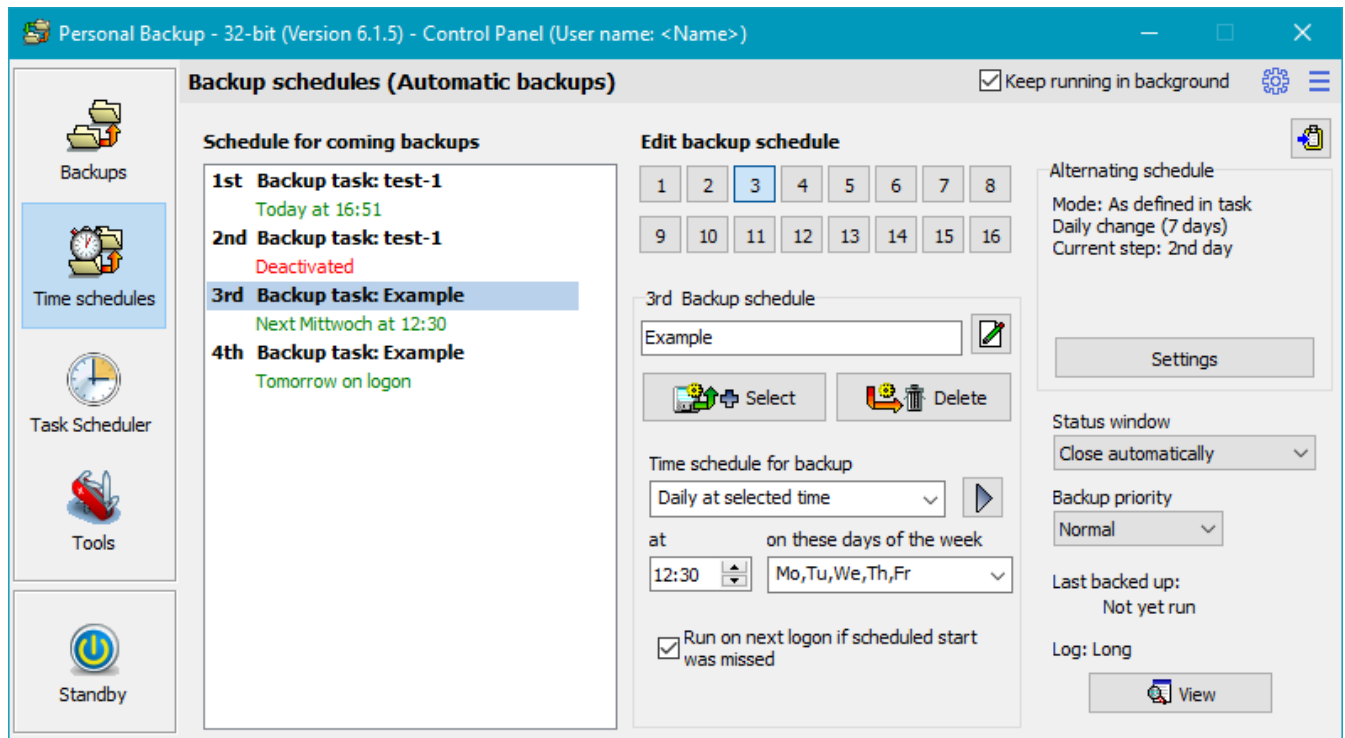


Time-controlled automatic backups



Click the **Time schedules** button on the **control panel** to display the settings for time-controlled automatic backups. The left window shows a summary of all upcoming backups. You can start up to 16 different backup tasks automatically at various times each with individual settings. Prior to that, each task must have been **configured and saved**.

A click on a region of the screenshot below will lead to help specific for that region:



Selecting a backup task

On clicking one of the buttons 1 through 16, the name of the backup task and the associated settings for automatic start will be displayed.

Beneath are two buttons with the following functions:



Select a saved task: a dialog will open to select the desired backup task for automatic execution. Then, you can configure the time schedule saved under the selected number (1..16) as described below.



Remove the time schedule for a task: the time schedule will be disabled, but the task file will be retained so that its configuration can be used again later.

Backup time schedule

There are six different options for starting an automatic backup together with the options to disable this or to start the backup by request:

Never

Disable this backup task for automatic execution


Always on logon

Each time the user logs onto Windows (or, on single-user systems, starts Windows), this backup task will be executed. To do this, a shortcut is added to the **startup folder of the Windows start menu**. A few seconds after logon (or startup) the program begins this backup task. The **progress bar** is displayed on the screen just as happens after starting manually. The **delay time** between logon (or startup) and backup can be preset by the user.

Daily on logon


The program performs the backup as above, but just once per day after the first logon (or startup). The next backup will then take place after the first logon (or startup) on the following day.

Daily at selected time

The backup will be performed at the specified time on the selected days of the week. A shortcut is added to the **startup folder of the Windows start menu** so that after the user logs on (or starts the computer), the program is launched automatically. It will remain hidden in the background to perform the backup at the specified time which will be indicated by a small  icon displayed in the Windows notification area. If the computer is switched off or is hibernating at this time, the backup will be caught up on as soon as possible.

Always on logoff

The backup task will be started automatically each time when the user logs off (or shuts the computer down). If the user has previously logged on on the same day, the backup will only be started **after the specified time of day**. This prevents starting backups on multiple logoffs or system-initiated restarts.

If this option is selected, every time after the user logs on (or switches the computer on), the program is launched automatically but remains hidden except for the  icon displayed in the Windows notification area.

Note: Because there is no way for the program to detect whether a Windows option such as "Restart" was selected by the user on initiating shutdown, the program will always perform the action selected for **shutdown** in the preferences.

On first logon

After the user first logs on (or starts Windows) on the selected days of the week, the backup will be started.

On first logoff

After the user first logs off (or shuts the computer down) on the selected days of the week, the backup will be started.

By request

The backup can only be started using the **command line and parameter #0** (e.g. from a batch script), via a **Desktop shortcut** using the selection *All "By request"* or the context menu in the taskbar using the same selection *All "By request"*. In each case you specify any combination of days of the week. You will find more information about this mode in the **tips and tricks** section.

If at least one automatic task is activated, the program adds itself to the Windows startup menu using the **command line option /auto**.

Note: All these **settings** will be **saved automatically** by the program.

Run unscheduled backup

Clicking this button will start the selected automatic backup immediately.

Copy time schedule to clipboard

Clicking this button will copy a list of all configured backup schedules to the Windows clipboard. You can insert this into any document using the associated text editor.

Status window

During an automatic backup, by default a window opens displaying the **progress of the backup** process. When the backup has been completed, the window displays the status of the backup (number of files copied, number of errors).

The drop-down list beneath the Status window contains options permitting you to control the behavior of this window, including whether a user prompt is to be opened on serious errors (e.g. destination drive not ready) inviting the user to resolve the problem.

Wait for prompt

During the backup a progress window is displayed. The status window must be closed by the user. This is the default setting for backups on logon. If the destination is not ready, the user will be prompted to switch on the drive or insert a volume.

Close automatically

During the backup a progress window is displayed. The status window will remain visible for a preset period and will then close automatically. This is the default setting for backups at a set time or on logoff. The delay can be selected in the preferences dialog under the **View options**. If the destination drive is not ready the user will not be prompted.

Not visible

The progress and status windows will not be displayed. Instead, the icon in the Windows notification area will blink. Clicking this icon will show or hide the progress window. If the destination drive is not ready the user will not be prompted

Wait only on errors

During the backup a progress window is displayed. The status window will remain visible if an error occurred. Otherwise it will be closed automatically after the preset period. If the destination is not ready, the user will be prompted to switch on the drive or insert a volume.

Not visible except on errors

The progress windows will not be displayed (see above). The status window at the end of a backup will be opened only if errors have occurred. If the destination drive is not ready the user will not be prompted.

Alternating backups

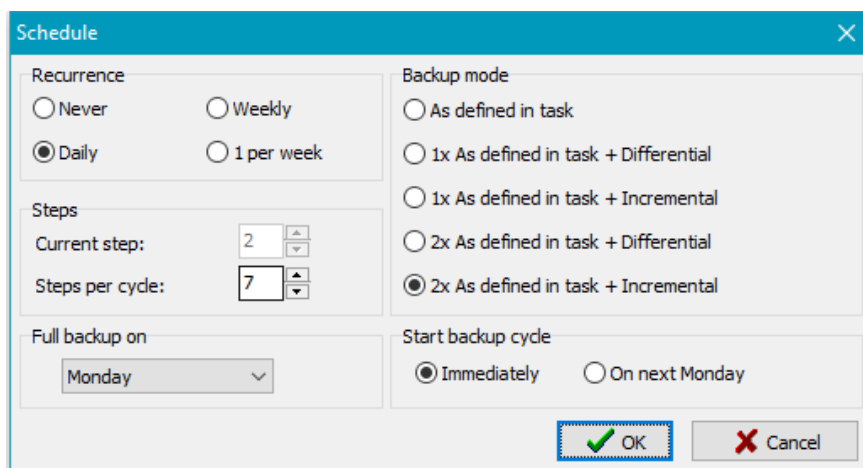
The schedule of the selected automatic backup is displayed in this window. To change the schedule, click the **Settings** button.

Recurrence:

In the upper left area (see screenshot), you can select when the destination directory is to change:

Never

No alternating schedule is configured. The backup will always be written to the same destination directory using the mode determined by the backup task.



The screenshot shows the 'Schedule' dialog box with the following settings:

- Recurrence:**
 - Never
 - Daily
 - Weekly
 - 1 per week
- Steps:**
 - Current step: 2
 - Steps per cycle: 7
- Full backup on:** Monday
- Backup mode:**
 - As defined in task
 - 1x As defined in task + Differential
 - 1x As defined in task + Incremental
 - 2x As defined in task + Differential
 - 2x As defined in task + Incremental
- Start backup cycle:**
 - Immediately
 - On next Monday

Buttons: OK (checked), Cancel

Daily:

If you select for example 5 steps per cycle, the destination directory will change each day from *BD01* to *BD05*. After 5 days the sequence is repeated from the beginning again (*BD01*).

If one of the daily modes is selected within **Start internal automatic backup** (see above), the backup will occur once daily.

Otherwise, it will occur on every logon or on every logoff.

Selecting 7 steps per cycle or a multiple of this, will result in a schedule based on the days of the week (see below).

Weekly:

The destination directories will be *BW01*, *BW02*, etc. and the backup will be carried out as configured (e.g. in Daily on logoff mode) into the respective destination directory for the current week. On the first possible day of the following week, usually on the Monday, the destination directory will be changed.

1 per week:

The backup will be carried out as described above, but occurring just once a week on the first possible day of the week.

Steps

Here, you can adjust how many steps per cycle are to be used. If an alternating schedule has been configured, you will find one subdirectory per step beneath the destination directory "**BDnn**" for a daily schedule (*nn* = current number of step) or "**BWnn**" for a weekly schedule (*nn* = current number of step).

Depending on your selection, the given number of days or weeks will elapse before the first backup is overwritten.

Daily backups with cycles of 7, 14, 21, .. days are a special case in that the destination directory will correspond to the day of the week (ISO 8601):

BD01 (08, ..) for Monday, *BD02* (09, ..) for Tuesday, etc.

In this case the day of the week for the first backup can be selected.

The field **Current step** shows the number of the step currently valid. If necessary this value can be adjusted by the user (except on cycles bound to days of the week).

Full backup on

This option is only available if the daily backup cycles are bound to the days of the week (**see above**). You can select the day of the week on which the full backup shall be performed.

Start backup cycle

This option is only available if the daily backup cycles are bound to the days of the week (**see above**). You can select whether the backup cycle shall be started on the day of the week next scheduled for the full backup or immediately on the same or following day. This means that the full backup will be caught up automatically at the next scheduled backup. For example, if the full backup is planned for Monday and the alternating schedule is newly configured on Thursday to be executed daily at 18:00, the full backup for Monday will be caught up on the same day at 18:00.

Backup mode

These options are only available when an alternating schedule mode is selected. You can choose one of the following settings:

As in task

The backup mode (Copy, Full (new), Differential or Incremental) is determined by the selections under the **Task settings** tab.

1 x As in task + Differential

The first backup of the schedule is a complete backup using the settings from the task:

- **Copy:** All new and changed files fitting to the selections from the task will be copied to the destination directory (without deleting it before). Optional a synchronization can be performed. The archive bits of all copied files will be reset at the source (regardless of the setting in the task).
- **Full (new):** All files in the destination folder will first be deleted and then all selected files will be copied resetting the archive bit.

Succeeding backups will be carried out using the Differential method, i.e. all files in the destination folder will first be deleted and then only those files that have the archive bit set will be copied. The archive bits remains unchanged.

1 x As in task + Incremental

The first (complete) backup of the schedule will be performed as described above for *Differential* mode.

Succeeding backups will be carried out using the Incremental method, i.e. all files in the destination folder will first be deleted and then only those files that have the archive bit set will be copied. The archive bits will be reset.

If such an incremental backup had already been performed on the current day (e.g. on multiple logoffs), the files already copied on this day are not deleted from the destination folder. All newly-changed files are copied according to their archive bit.

2 x As in task + Differential

In this mode, the selected cycle will be run twice. Two complete backups will be made (e.g. with 5 steps per cycle, performed as the 1st and 6th step). All other actions will be as for **1 x As in task + Differential**.

2 x As in task + Incremental

This mode is similar to the above except that the Incremental mode is used for the backups.

Note: If an alternating mode is selected, a letter is appended to the subdirectories to indicate the backup type: **F** = full backup, **D** = differential backup and **I** = incremental backup.

Backup priority

You can adjust the priority of the file copying processes with respect to other applications: if you select "Very low", other running processes will be decelerated less than with the "Normal" setting. If you select "High", the file copying processes will be given a higher

priority, possibly causing other applications to run more slowly.

Information on automatic backups

At the bottom right you will find information concerning the currently-selected automatic backup task:

- The date and time last run
- The associated log settings

Clicking the [View](#) button will **display the log** of the selected automatic task.

J. Rathlev, 24222 Schwentinental, Germany, July 2020



Automatic backups using Windows Task Scheduler



In addition to the possibilities built into the program for starting **automatic backups**, you can also achieve this by using Windows Task Scheduler. This method can have certain advantages:

- There are more options for configuring daily, weekly or monthly schedules.
- The backup will be started as a service using the credentials of any user account.
- The backup will be started even if no user is logged on. This is very useful for backups on Windows servers.

Overview

The screenshot shows the Windows Task Scheduler interface. The title bar reads "Personal Backup - 32-bit (Version 6.1.1) - Control Panel (User name: <Name>)". The main window is titled "Windows Task Scheduler" and has a "Keep running in background" checkbox checked. On the left sidebar, "Task Scheduler" is selected. The main area displays a table of "Scheduled tasks that use Personal Backup":

Name	Last run time	Next run time
Backup-Delphi-Full	01.02.2020 13:00	01.03.2020 12:00
Backup-Test	01.02.2020 13:50	02.02.2020 13:50
Backup-test-3	29.01.2020 12:00	02.02.2020 15:00
Backup-test-plan-wd	01.02.2020 20:03	02.02.2020 19:45
Backup-test-plan-ww	27.01.2020 19:45	03.02.2020 19:45
Verify-test	30.01.2020 13:45	03.02.2020 13:45

Below the table, "Backup-test-3: 3 schedules" are listed. "Schedule 1:" is shown as "At 12:00 every Mittwoch of every week, starting 06.03.2019". On the right, there are buttons for "New backup as scheduled task", "Edit scheduled task", and "Delete scheduled task". Below these, the "Backup task" is set to "E:\Jürgen\PersBackup\test-3.buj". The "Creator" is "Jürgen", "Created" is "06.03.2019 11:39:46", "Status" is "Ready", and "User account" is "BUERO\Jürgen".

Scheduled backups: The list shows all Windows scheduled tasks using Personal Backup together with their last and next run times. A colored ball indicates if the last backup was performed duly (**green**) or not (**red**). To get more information in case of failure, open *Windows Task Scheduler* from the system start menu.

A right click on the list will open a **context menu** to edit, delete or start a scheduled task.

Time schedules: Beneath the listing, the time schedules (also called *triggers* in Windows) are displayed. If there are more than one schedule, a click on the arrow buttons at the right lets you select one of them.

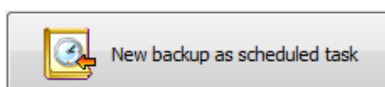
Add schedule: Click the button to add a new schedule (e.g. on other days of the week) to the selected backup (**see**).

Delete schedule: Click the button to delete the selected schedule.

Important note:

Personal Backup 6 supports the extended features of Windows Task Scheduler available since Windows Vista. Therefore, if using the program under Windows XP, the Windows Task Scheduler wizard will not work.

Creating a new backup schedule



Click this button to start the wizard to create a new scheduled task.

The current backup task will automatically be inserted as to be performed by **Personal Backup**. You can add further backup tasks by clicking the folder button to the right of the *Tasks (Backup)* field. A special start directory (normally not required) and a separate **ini file** for this backup can be specified if so desired.

The backup log will be written to the file specified in the **task options** (default: *Persbackup.log*). If no path is specified here, the ini file path will be used.

The following additional options can be selected to determine the behavior of the program. For your information, they will automatically be displayed in the field *Command line parameters* as entered in the Windows Task Scheduler.

Status window

You can select how the **status window** will be displayed during backup.

Close after

If either *Close automatically* or *Wait only on errors* is selected for the status window, you can set the time period after which the window will automatically close.

No splash screen

The splash screen will be suppressed at program start.

Subsequent action

Selecting one of these options will cause the associated action to occur on completion of the scheduled backup, for example to shut down the system.

Error handling

If an action has been selected to be executed after a backup, this can be modified by clicking the Error handling button, such that this action will not be carried out if a backup error occurred. The dialog makes it possible to choose on which errors this shall happen.

Log mode

Logging can either be carried out as defined in the backup task to be performed or independently of this as selected here.

Process priority

Here, you can specify the **priority** of the file copying processes relative to other running applications.

Click the *Next* button to configure the schedule.

Daily schedule

Windows Scheduled Task Wizard (Backup) ✕

Name of scheduled task:
Backup-test-3

3rd Schedule

Perform this task:

Daily
 Weekly
 Monthly
 One time only
 On logon
 On waking up the computer

Schedule enabled

Settings for daily schedule:

Start: 03.04.2019 16:00

Perform this task:

Every day
 Every 2 days

Advanced settings ...

Back Next Cancel

Advanced Schedule Options ✕

Expire: 09.11.2018 12:00

Repeat task:

every: 1 hour(s)

duration: 4 hour(s) 0 minutes

Stop task if it runs longer than:
3 day(s)

Run task as soon as possible after a scheduled start is missed

OK Cancel

The main options are similar to those in the Windows scheduled task wizard. To initiate a daily backup, first select the time of day this is to start and on which date (default being the current date). By default, the backup starts every day but optionally a preset number of days can be skipped. In addition, optionally you can specify the date from which no further backups will be performed, a repeat interval with duration, a maximum runtime and a restart if a scheduled start was missed (*Advanced settings*).

To enter the user account data click on [Next](#).

Weekly schedule

The screenshot shows the 'Windows Scheduled Task Wizard (Backup)' dialog box. The 'Name of scheduled task' field contains 'Backup-test-3'. Under '3rd Schedule', the 'Perform this task:' section has radio buttons for 'Daily', 'Weekly' (selected), 'Monthly', 'One time only', 'On logon', and 'On waking up the computer'. A 'Schedule enabled' checkbox is checked. The 'Settings for weekly schedule:' section includes a 'Start:' field with a date dropdown set to '03.04.2019' and a time spinner set to '16:00'. Below this is an 'Every' spinner set to '1' weeks. The 'On the following days of the week' section has checkboxes for 'Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday', and 'Sunday', with 'Monday', 'Thursday', and 'Saturday' checked. At the bottom are 'Back', 'Next', and 'Cancel' buttons.

The start time and start date can be selected as described above for a daily schedule. The backup can be started every week (default) or can skip a preset number of weeks. In addition you can determine on which days of the week the backup is to be performed. Clicking the upper right button will open the *Extended settings* (see above).

To enter the user account data click on [Next](#).

Monthly schedule

The screenshot shows the 'Windows Scheduled Task Wizard (Backup)' dialog box with the 'Monthly' schedule selected. The 'Name of scheduled task' field contains 'Backup-test-3'. Under '3rd Schedule', the 'Perform this task:' section has radio buttons for 'Daily', 'Weekly', 'Monthly' (selected), 'One time only', 'On logon', and 'On waking up the computer'. A 'Schedule enabled' checkbox is checked. The 'Settings for monthly schedule:' section includes a 'Start:' field with a date dropdown set to '03.04.2019' and a time spinner set to '16:00'. Below this is a 'Days:' dropdown set to '1,7,15,23' and an 'On:' dropdown set to '1st' of the month 'Mo'. The 'of the following months:' section has checkboxes for 'Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', and 'Dec', all of which are checked. At the bottom are 'Back', 'Next', and 'Cancel' buttons.

The start time and start date can be selected as described above for a daily schedule. The backup can be started on particular days of the selected months or on particular days of selected a week of the selected months. Clicking the upper right button will open the *Extended settings* (see above).

To enter the user account data click on [Next](#).

Other times

Other options for starting a backup are:

One time only

The backup is to be started once at a selectable time on a selectable date.

On log on

The backup is to be started whenever the specified user logs on.

On waking up the computer

The backup is to be started every time the computer is waked up from stand by or hibernation.

Complete and save

At this point you can edit the description of the task (Default: *This task was created by Personal Backup*).

Finally, you must define how the task is to be started:

- **As logged-on user:** The backup will only be started if the current user is logged on. No user name and password are required.
- **As any user with password:** The backup will be started whether the user is logged on or not. This may be the user who just logged on (usually with limited credentials), an administrator or any other user (e.g. a user belonging to the group *Backup operators*). In each case you must enter the password of this user (see screenshot top right).

Important note: The specified user must be member of the Windows group *Backup Operators* because he needs the right to *Log on as a batch job* ([more information from Microsoft](#)).

Clicking the **Done** button inserts this new or changed task into the list of Windows scheduled tasks and closes the wizard. You can inspect the task settings directly from Personal Backup ([see below](#)) or by using the Windows functions *All Programs Accessories System Tools Task Scheduler* or via *Control Panel Administrative Tools Task Scheduler*.

Automatic Verify using Windows Task Scheduler

You can configure a **Windows scheduled task** to carry out an automatic Verify. The settings for **verification** must be **saved as a file** beforehand. Configuring the time schedule is the same as [described above for backups](#).

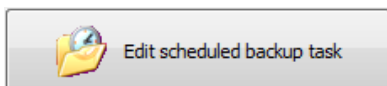
Automatic Restore using Windows Task Scheduler

You can configure a **Windows scheduled task** to carry out an automatic Restore. The settings for **restore** must be **saved as a file** beforehand. Configuring the time schedule is the same as [described above for backups](#).

Automatic Cleanup using Windows Task Scheduler

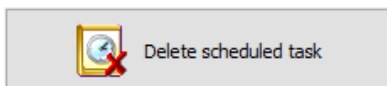
You can configure a **Windows scheduled task** to carry out an automatic Cleanup. The settings for **cleanup** must be **saved as a file** beforehand. Configuring the time schedule is the same as [described above for backups](#).

Editing a scheduled task



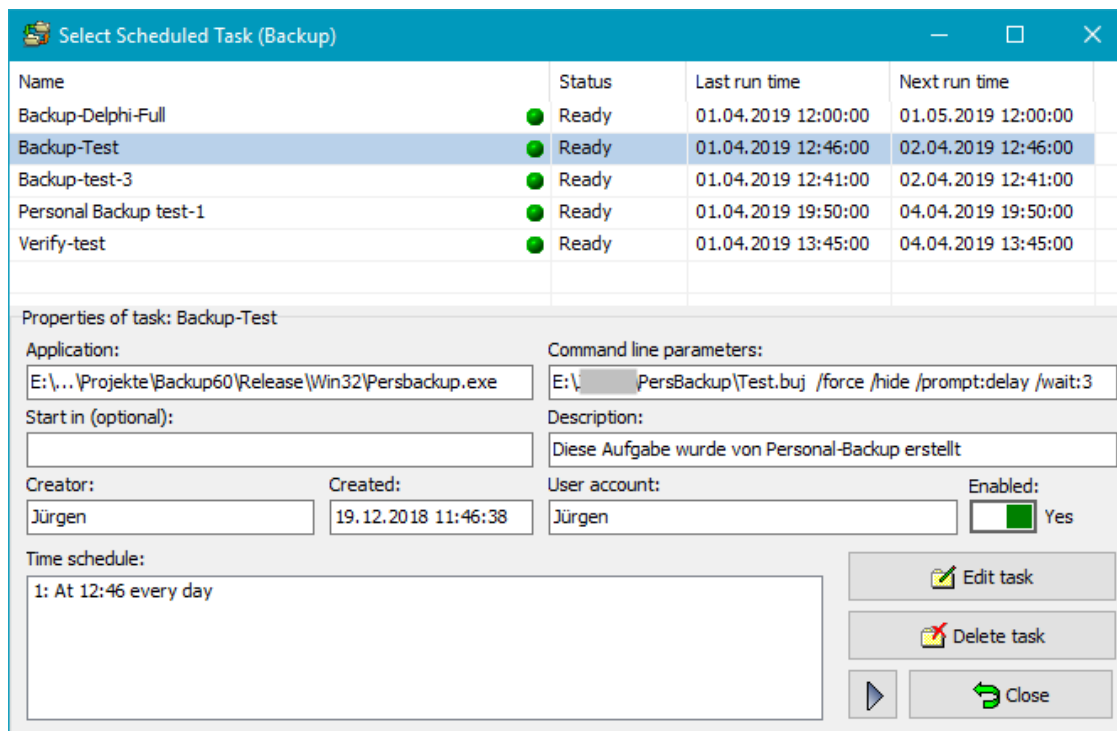
Click this button to open the scheduled task **selected in the list** and to **reconfigure** its settings. If no task is selected, the **dialog shown below** will open to show a summary of all scheduled tasks.

Deleting a scheduled task

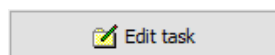


Click this button to delete the scheduled task **selected in the list**. If no task is selected, the **dialog shown below** will open to show a summary of all scheduled tasks.

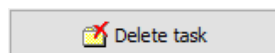
Summary of all scheduled tasks



Only tasks registered in Windows Task Scheduler involving Personal Backup are displayed in the Select Scheduled Task dialog box (see screenshot above). The properties of the selected task are displayed in the lower part of the window. Clicking the toggle switch on the right will enable or disable the selected task. Click one of the buttons on the lower right to initiate one of the following functions:



Edit the settings for the selected scheduled task, e.g. the time schedule ([see above](#)).



The selected scheduled task will be deleted.



Run the selected scheduled task immediately or stop it: If the selected scheduled task is ready to run (left icon), clicking this button will start the task immediately. If it is already running (right icon), the task will be stopped.




Personal Backup Version 6

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Personal Backup in the Windows notification area

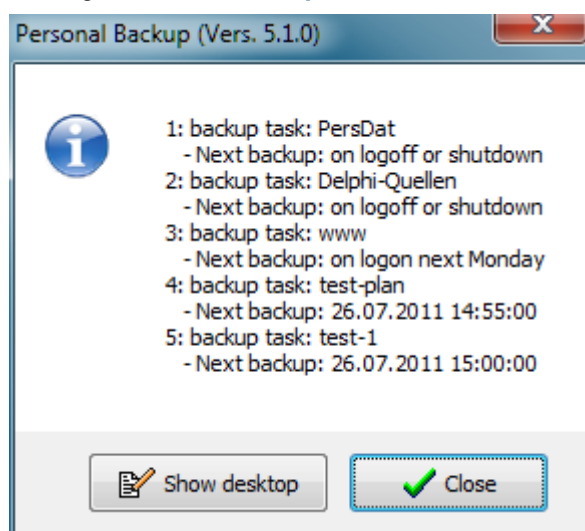


After starting the program, an  icon will be displayed in the Windows notification area (usually at the bottom right-hand corner of the screen). Under Windows 7, 8 and 10 this icon may initially be hidden, in which case do the following:

- **Windows 7:** Click the arrow adjacent to the notification area and *Customize* and select *Show icon and notifications* for **Personal Backup**
- **Windows 10:** Click the arrow adjacent to the notification area to view all hidden icons. To show the icon permanently, right-click an empty area on the taskbar, click *Properties* and under *Notification area*, click *Customize*, select the option *Show icon and notifications* and enable **Personal Backup**

Left-clicking the icon

This will display the schedule of all automatic backups. Optionally, you can open the program desktop window by clicking the **Show desktop** button.



Right-clicking the icon when the program window is opened

When using multiple monitors it can happen that the program window remains hidden because it is located on a monitor that has been removed or switched off. In this case right-clicking the icon will optionally move the window to its default position on the first (main) screen.

Right-clicking the icon when the program is running in the background

This will open a local menu to start several different actions. Clicking on **Personal Backup** will open the **program desktop window** to create or edit backup task and to start it manually.

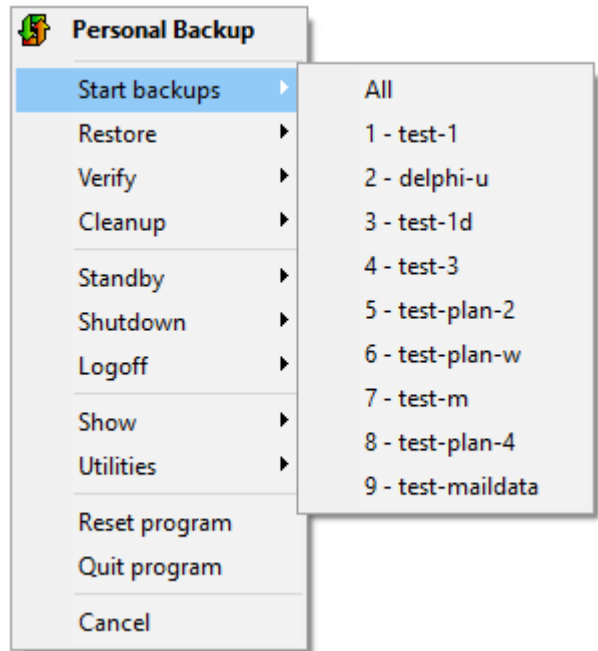
Clicking on **Reset program** will adjust all program windows to their default size and position.

Clicking on **Quit Program** will terminate the program running in background. The icon will be removed from the notification area and no more automatic backups will be performed until the next user logon.

Clicking on **Cancel** will close the right-click menu without further action.

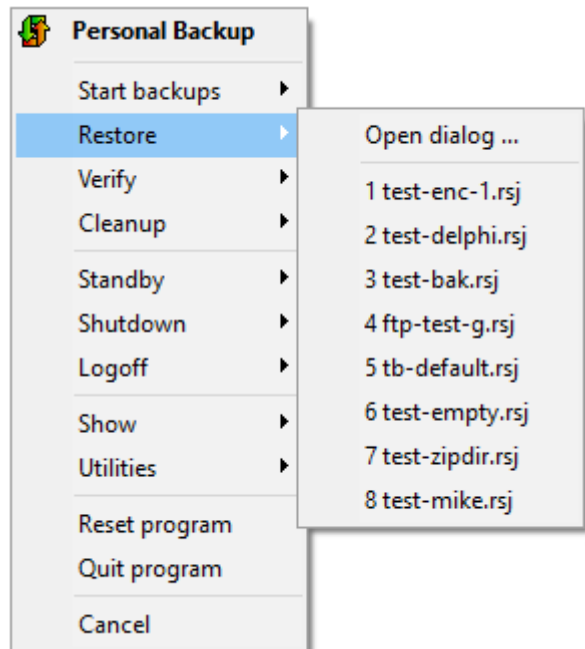
Start backups

The list shows all tasks designated for **automatic execution**. You can either start all listed tasks one after another or one selected. Before starting the backup in any case a dialog is opened to optionally specify standby or hibernation afterwards.



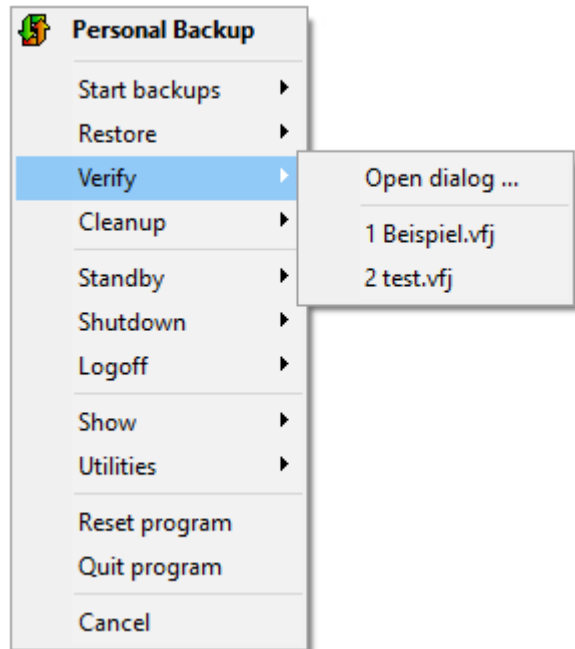
Restore

The list shows all recently used restore tasks. After selecting one of them the associated configuration will be loaded into the dialog window for **restoring** files and can there be started manually. Alternatively, the dialog can be opened without loading a task, e.g. to create a new one.



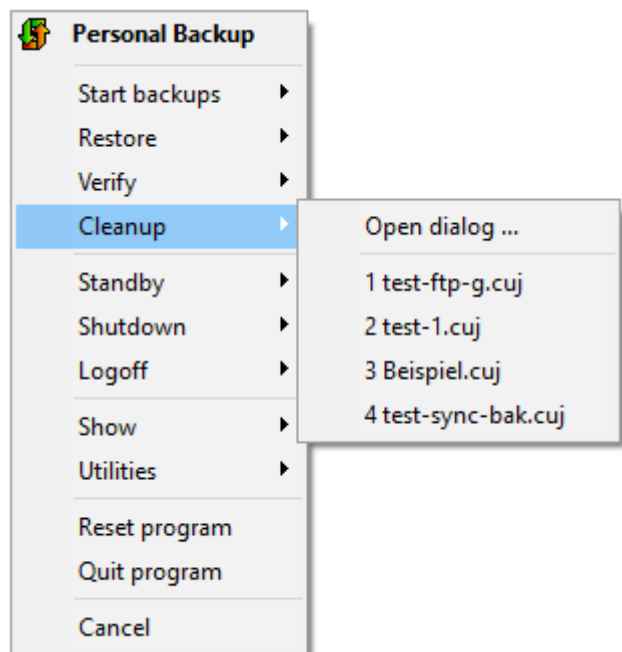
Verify

The list shows all recently used verify tasks. After selecting one of them the associated configuration will be loaded into the dialog window for **verifying** files and can there be started manually. Alternatively, the dialog can be opened without loading a task, e.g. to create a new one.



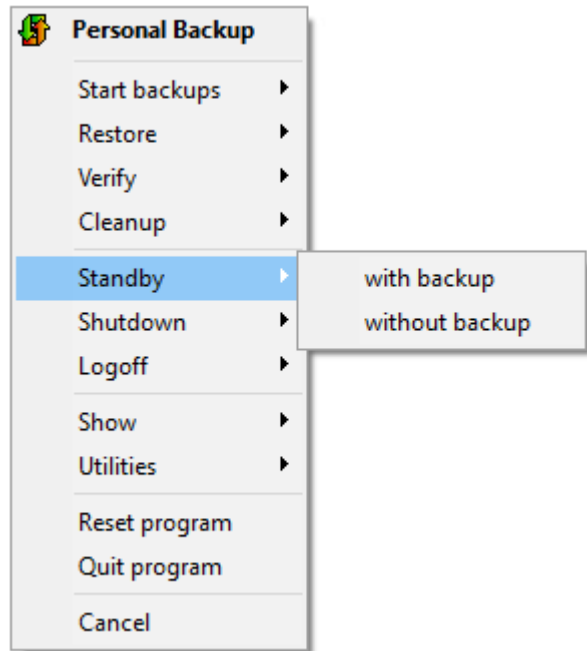
Clean up

The list shows all recently used clean-up tasks. After selecting one of them the associated configuration will be loaded into the dialog window for **Clean up** directories and can there be started manually. Alternatively, the dialog can be opened without loading a task, e.g. to create a new one.



Standby

The computer will be put into standby mode. Optionally, you can select if the backup tasks designated for execution at logoff shall be performed before.



Shutdown

You can select how to shut down the computer and if backups should be performed before.

with backup

All backup tasks designated for execution at logoff will be started, after which the computer will be shut down.

with backup, then hybrid sleep

All backup tasks designated for execution at logoff will be started, after which the computer will be shut down and put into hybrid sleep.

with backup, then restart

All backup tasks designated for execution at logoff will be started, after which the computer will be restarted.

without backup

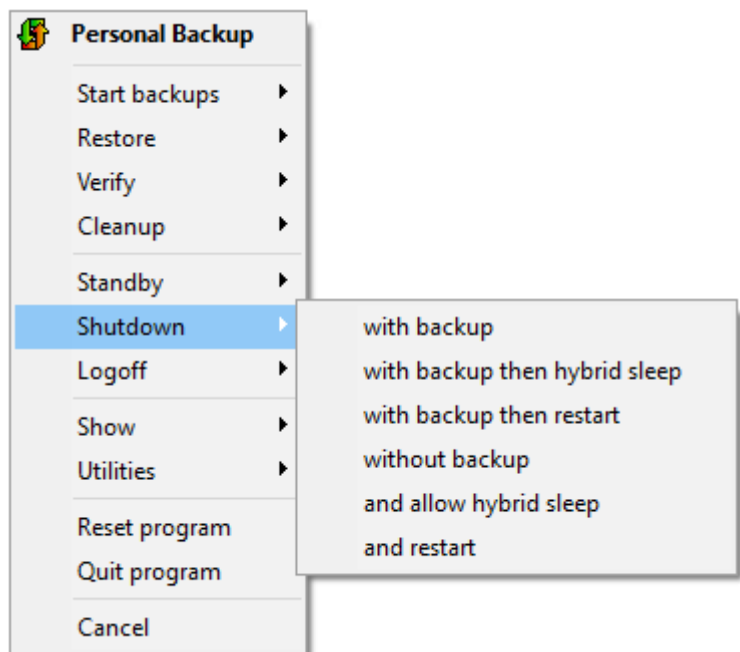
Shut down the computer without any backup.

and allow hybrid sleep

Shut down the computer without any backup and put it into hybrid sleep.

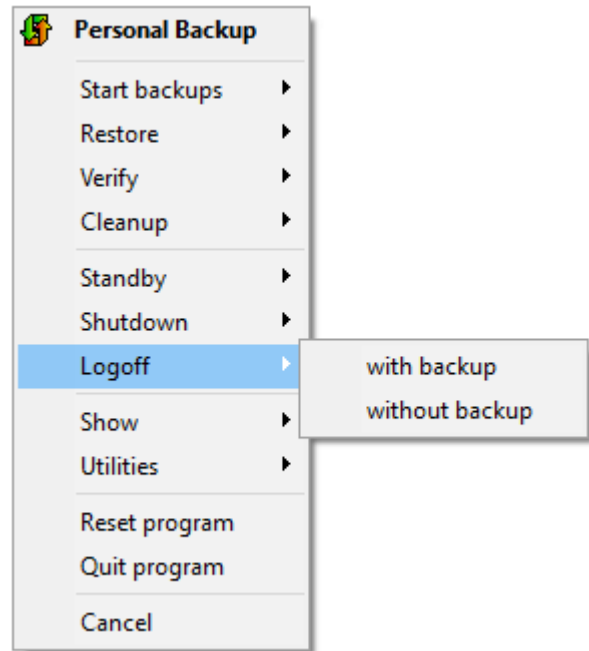
and restart

Restart the computer without any backup.



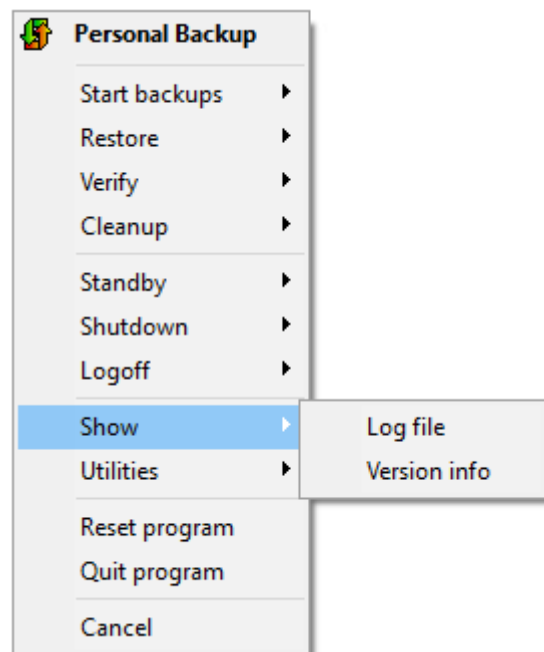
Logoff

The user will be logged off. Optionally, you can select if the backup tasks designated for execution at logoff shall be performed before.



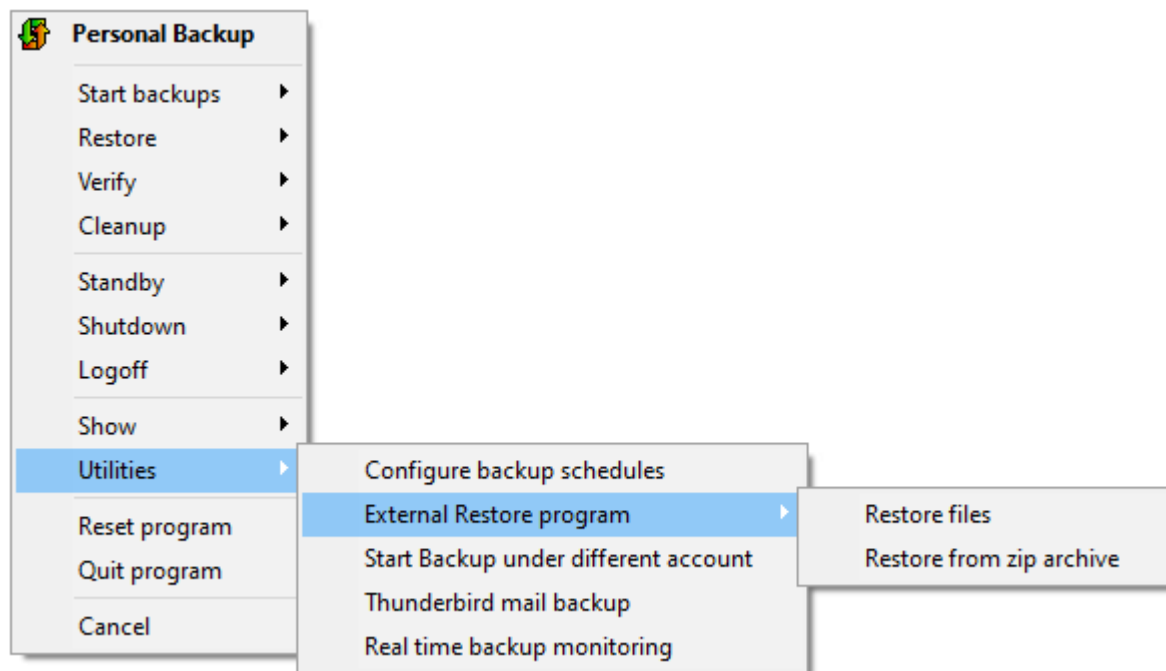
Show

You can either open a window to show the last **backup log** or display the version info of the running program.



Utilities

Launch one of the **utility programs** included in the program package.



J. Rathlev, 24222 Schwentimental, Germany, January 2020



Personal Backup Version 6

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Restore data from backup

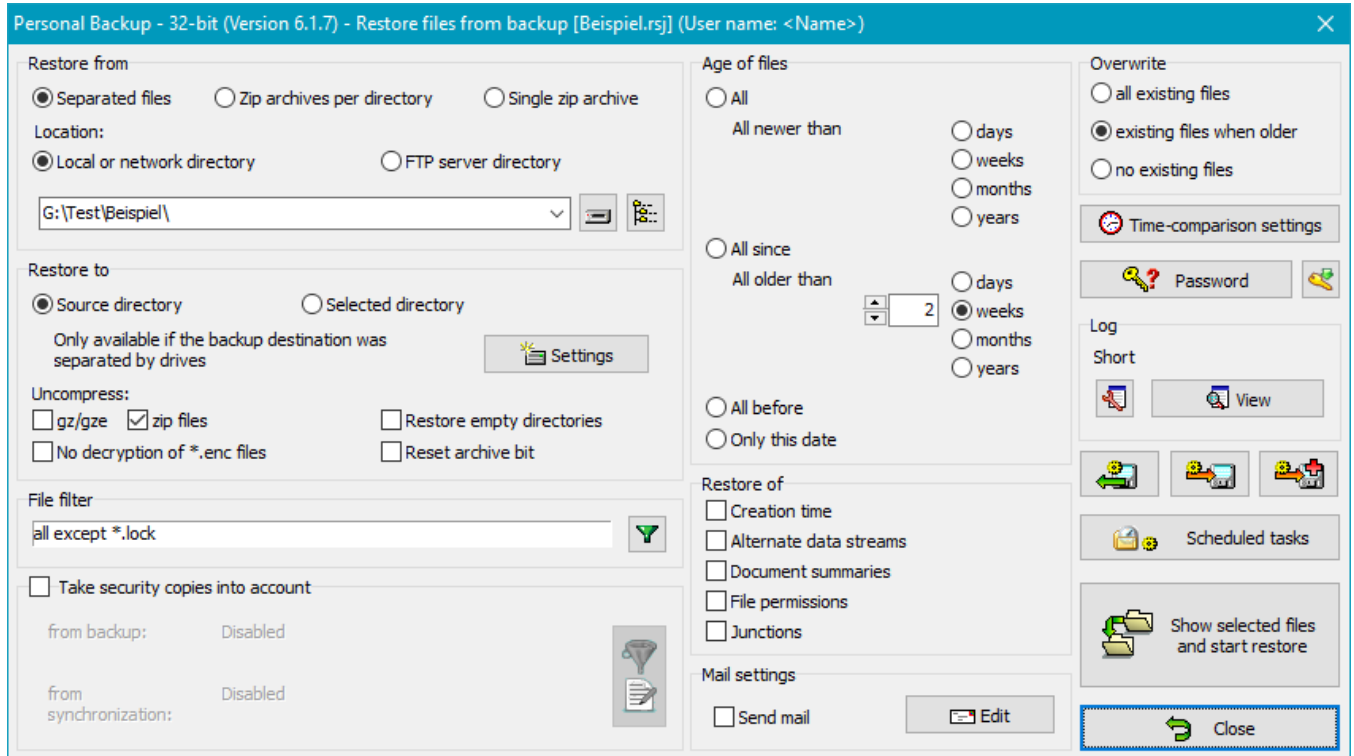


In the event that data has been lost and must be restored from a backup, the program offers two options:

- The internal Restore function
- The additional program **PbRestore**

The internal Restore function

Clicking the button in the tool bar on the left will open a dialog window in which you can select which files and from which directory you wish to restore and to which directory the files are to be copied. These settings can be saved as task (<filename>.rsj) for use at any time.




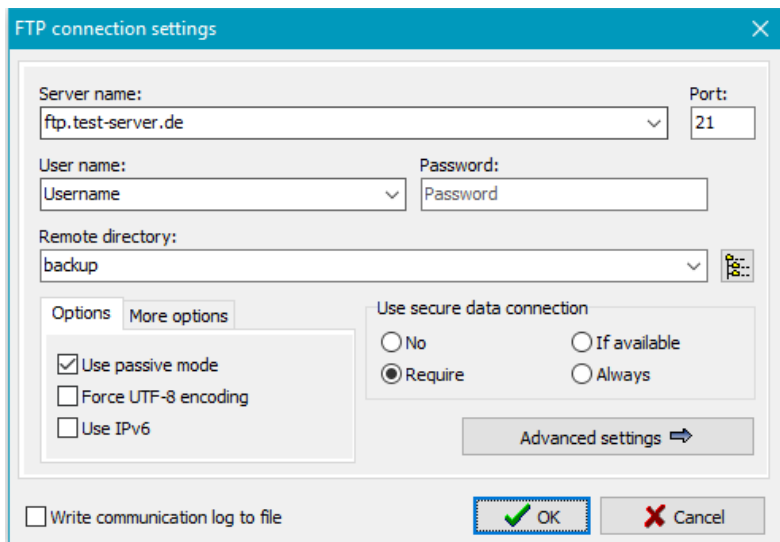
Select the location of the backed up files for Restore


When restoring files, you must consider how the data was backed up ([see Backup destination](#)):

- **The backup directory is on a local storage medium or on a network drive**
Data can be restored from single files or from zip files:
 - Select the root directory if the data was saved as single files (even if compressed and/or encrypted).
 - Select the zip file in the root directory if the data was saved as one zip file per subdirectory. All zip files in the subdirectories of the same name will be included automatically.
 - Select a single zip file if all data was saved there.
- **The backup directory is on an FTP server**
A direct restore is only possible if your data was saved as single files (even if compressed and/or encrypted). In all other cases you need to restore in two steps:
 - First restore all required zip files including the directory structure to a temporary local folder. For this step you can use Personal Backup in Restore mode for *single files* or any FTP client such as FileZilla or Total Commander.
 - Then restore the files from the local folder as described above.

FTP settings for restore


Clicking the  button will open a dialog to configure the FTP server connection parameters ([see here](#)):



After clicking the  button, the program will connect to the FTP server and read the remote directory tree of the backup for the user to select a subdirectory.

Restore to

Files can be restored either to the original source directory or to any other location:

- Source directory:** The source path will be derived from the pathname of the backup folder. A restore to source is only possible if you backed up the data with the option **Drives separated**, so that drive indicators (such as *DrvC*, *DrvD*, ...) are part of the backup directory path. In this case *Lw?* must be given as drive identifier. The question mark will be replaced with the respective drive letter, hence it is even possible to restore to source directories on different drives.
- Selected directory:** In this case you must browse for the directory where the files are to be restored. Clicking the  button will open a dialog where you can select the directory. In this mode, the restore function can be used to make copies of all backed-up files in their original directory structure at a different location, e.g. on another computer.

Uncompress gz/gze and zip files

If the backup was made into single compressed files, select the same mode as used during backup. So all files will automatically be unpacked on restore in the right way (default setting : *gz/gze*).

No decryption of enc files

Personal Backup adds the file extension *enc* for uncompressed encrypted files. These files are decrypted automatically on restore. If there are files from another application using this extension, the decryption will fail. You can prevent the program from decrypting such files by checking this option.

Restore empty directories

If this option is selected, even empty directories will be restored.

Reset archive bit

If this option is selected, the archive bit of each restored file will be reset.

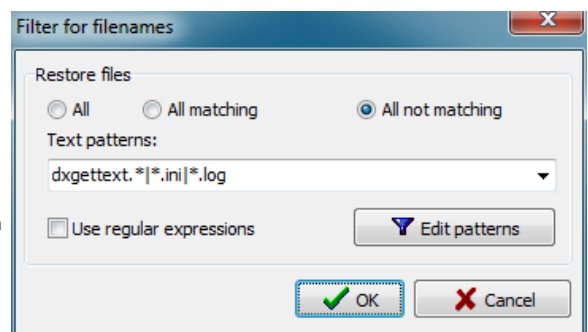
File filters

By using filename filters, filenames matching certain patterns may be included or excluded. Use the same rules as described for backup file filters (**Standard file filter** or **Regular expressions**).

File age

You can specify whether you want to restore only files newer or older than a given fixed or relative date.

- Relative to actual date:** newer or older than the specified number of days, weeks, months or years
- Fixed date:** newer or older as or exact thew given date



Overwrite

Here you can specify whether existing files are always to be overwritten, or only when they are older than those from your backup, or never.

Settings for time comparison

Comparing the timestamps of files is problematic when using different file systems. **Adjust** the settings to be system-independent.

Restore of

Creation time

If this option is selected, the **creation time** of the files will also be restored.

Alternate data streams

If this option is checked, any alternate data streams saved with the files ([see here](#)), will be restored.

Document summaries

If this option is checked, the document summaries, possibly saved with the files ([see here](#)), will be restored.

File permissions

In NTFS file systems and network shares, an access control list (ACL) that specifies the permissions for each user is associated with each file and directory. If this option is set, also the permissions of files and directories will be restored ([see here](#)). For this to happen, it is necessary that ACLs are supported by both source and destination.

Junctions

If this option is set, the information about junctions saved during backup ([see here](#)) will be analyzed to recreate the junctions in the destination directory of the restore. Depending on the restore settings, the contents of the directories, to which the junctions point, must possibly be restored separately.

Important note: To restore junctions, administrator rights are required.

Take security copies into account

This option is disabled by default, but must be activated only if

Security copies were created during backup.

Use this option to define how these security copies shall be taken into account during restore. The settings for prefixes and suffixes must be set in the dialog (see screenshot below) as used during backup to identify these directories and files. There are two possible selections:

1. **Ignore:** All directories and files matching these settings will be ignored on restore. Only the most recent files will be restored from backup (default setting).
2. **Include:** This selection is required if you wish to restore to the state as at a former date, as specified under **File age - All before** All directories and files matching the settings for prefix and suffix will be scanned on restore to find the most recent file version matching to the selected **time slot**. The files will be moved automatically to their correct destination.

The settings can be specified separately for security copies from backup and from synchronization:

● Security copies created during backup

The option **Directory prefix** is only required if the security copies were moved to a separate directory. If these copies are to be considered during restore, it is necessary to specify the same prefix which was used during backup.

The option **Filename suffix** must be selected if the security copies were not

moved to a separate directory, but created by renaming. You must select the same settings as used on backup. If placeholders were used on backup, clicking the appropriate button will insert the filter pattern needed to exclude these files. If a number of prior versions have been saved, use the upper right button to insert the counter placeholder ("#" character, e.g. *bak-#*).

Should several statements be required, these can be separated by semicolons (e.g. *bak;bak-#*).

● Security copies created during synchronization

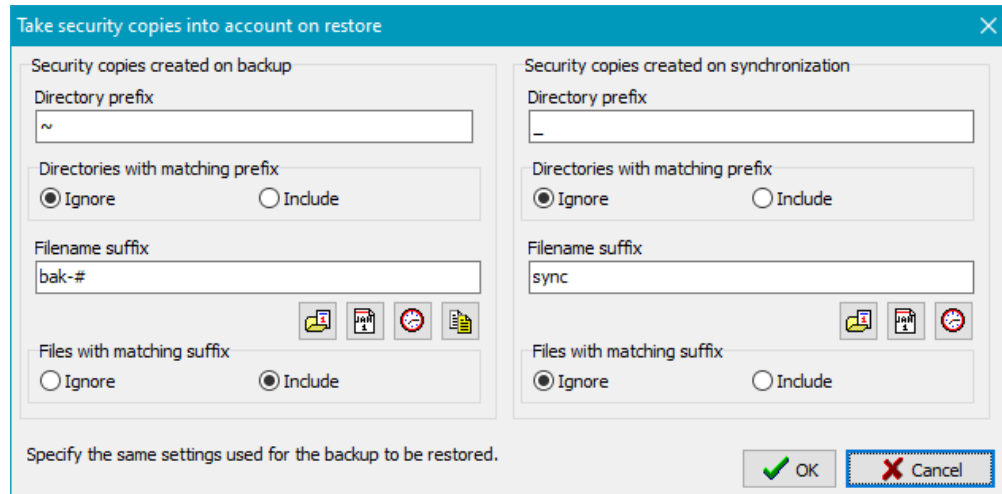
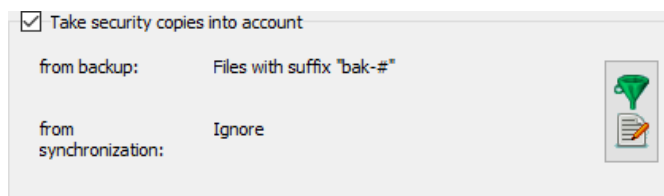
The option **Directory prefix** must be specified to use the same settings as used for the security copies on synchronization during backup. This applies both to directories that had to be deleted during synchronization and to the optional selectable directory used to move files to be deleted. If security copies are to be considered during restore, additionally you have to specify which directory option was used during backup.

The option **Filename suffix** is only required if the security copies were not moved to a separate directory, but created by renaming.

If placeholders were used during backup, clicking the appropriate button will insert the filter pattern needed to exclude these files.

Mail delivery after restore

Similar to the option for backups, a mail with status information and optionally a log file can be sent after performing a restore task. The **settings**



are the same as for backup.


Password

Here you can optionally specify a fixed password to be used for decryption of files. In this case the user will not be prompted to enter it during restore. So a restore may be performed in background without user interaction.

By clicking the small button at the right, you can import the password from the associated **backup task**. Note that this option cannot be used if the **backup task is protected**.

The icon on the button changes to show whether a fixed password  was specified or the password has to be queried  on restore.

Import password




Clicking the  button will open a dialog to select the backup task associated to the restore. A registered **fixed password** will be imported and automatically used for restore.

Log settings

Clicking the  button will open a **dialog** to adjust the log settings for restore.

Click then  button to view the current log.

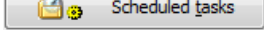
Loading and saving restore tasks

Clicking the  or  button will save a configured restore task with all settings to disk. To load and reuse such a saved task, click the  button.

A saved restore task can also be started from the **command line**. This makes it possible to use the Windows Task Scheduler to restore files at specific times, or to restore a directory (for example automatically on logon) by adding a shortcut to the Windows start menu (see [All Programs Startup](#)):

```
PersBackup /restore <rest-task>
```

Automatic Restore using Windows Task Scheduler


You can configure a Windows scheduled task to carry out an automatic Restore by clicking the  button. The configuration procedure is the same as [described for backups](#).

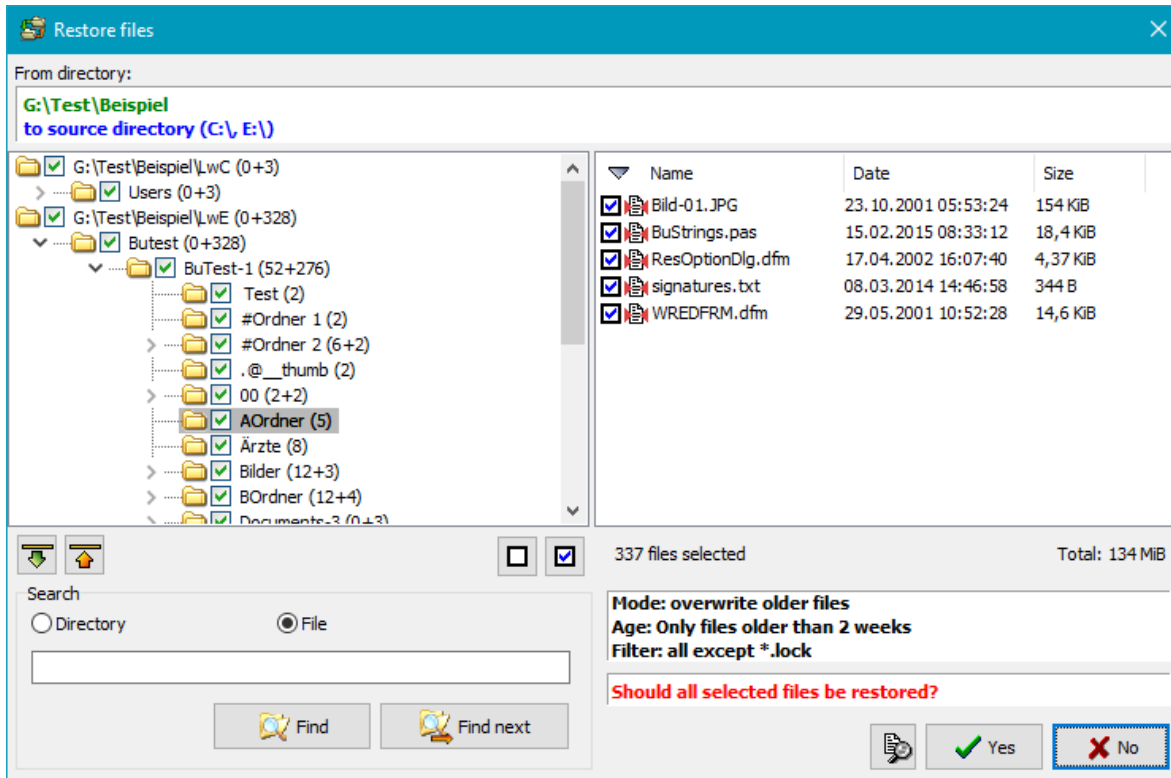
Start restore

Clicking the button will start the restore. Before restoring any files, the program will create and display a list of all files that match the filter conditions. If the selection is not to your liking, you can cancel the restore at this point and adjust your settings. It is also possible to select or deselect files or directories individually by tagging the checkboxes.

Right-clicking a file will open a local menu that allows its contents to be viewed or compared with the source (if available):

- **View file:** If no special viewer such *Lister.exe* (see [Total Commander package](#)) was selected, the Windows default file type settings will be used to start the associated program. Compressed or encrypted files will be processed beforehand.
- **Compare file:** You can use the open source program [WinMerge](#) for comparing files. Compressed or encrypted files will be processed before loading.

To use these options, an external viewer and a comparison program must be specified. Clicking the  button will open an appropriate dialog. After this, all selected files will be restored. Any necessary unpacking and decryption will occur automatically. If required, a password must be entered by the user only once. If you wish, you can save the password with the restore task ([more ..](#)) to avoid any interaction during restore



The additional program PbRestore

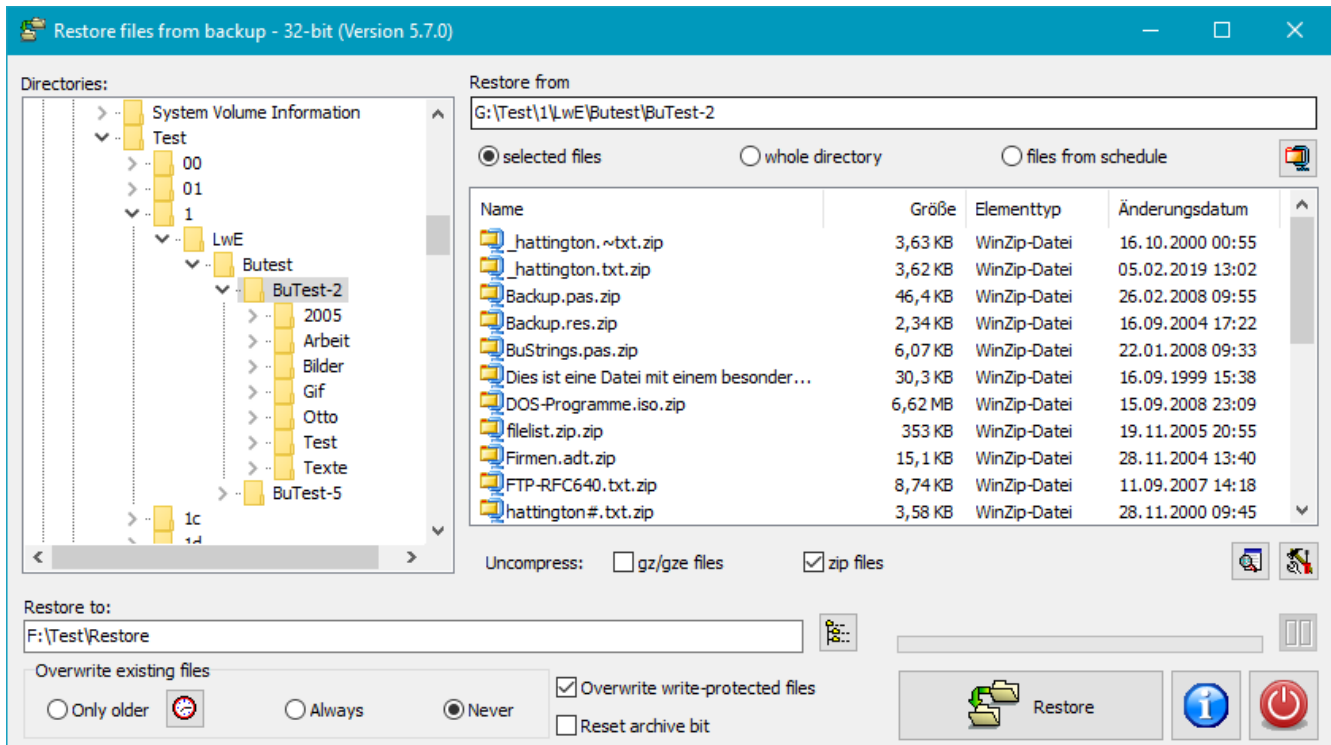


The program can be started via the **Windows Start Menu** or in **Personal Backup** by selecting **Control panel menu - Utilities - External Restore program** in two different modes of operation:

- **Restore files** - Restore data saved as **separate files**
- **Restore from zip archive** - Restore data saved in **zip archives**

You can copy this supplementary program onto a USB stick to restore files in emergency without installing *Personal Backup* in its entirety.

Restore data from backup into separate files



The program offers three options to restore data **backed up into separate files** (even if compressed as **gz/gze or zip** and/or **encrypted**):

- **Restore selected files**
- **Restore all files from a selected directory and all its subdirectories**
- **Restore data from an alternating schedule**

In all three cases compressed and/or encrypted files will be unpacked and/or decrypted automatically. The destination directory must be selected manually. In addition you can select, whether files already existing in the destination directory shall be overwritten or not. If only older files shall be overwritten, you can adjust the settings for time comparison ([see here](#)). Optionally you can disable the overwriting of write-protected files and reset the archive bit of each restored file.

By clicking the **tool** button at the lower right of the file list you can adjust whether you wish to associate *gz*, *gze* and *enc* files with **PbRestore** as the default application in Windows. Click the upper right button to switch to **zip mode**.

Restore selected files

First, on the left select the directory or if the option *Uncompress: zip files* is selected the zip archive, containing the files to be restored. On the file list at right you can select the desired file(s) using the mouse or keyboard (*Ctrl-A* for all or *Ctrl-N* for none) in the normal way. Clicking the **Restore** button will initiate the copying of files into the specified destination.

Uncompress: If the option *Uncompress: gz/gze files* is selected, the files will be unpacked automatically. The same applies to zip files if the option *Uncompress: zip files* is enabled.

Decryption: On encrypted files (*enc* or *gze*) or on encrypted zip files the user will be prompted to apply the password to start the decryption automatically.

Double-clicking a file or the *Preview button* at the lower right will start the application associated in Windows with this file (e.g. an image viewer for *jpg* file).

Restore all files from a selected directory

First, on the left select the directory or zip archive, containing the files to be restored. All files from this directory and its subdirectories (if any) or in the archive will be copied to the destination directory. The directory structure will be retained.

Optionally you can disable the unpacking of *gz/gze* and *zip* files.

Restore from a schedule

If your files were saved using an alternating schedule (Full backup in conjunction with incremental/differential backups) the files will be distributed to several directories (e.g. *BD01F*, *BD02I*, *BD03I*,...). When restoring it is necessary to retrieve the most recent versions.

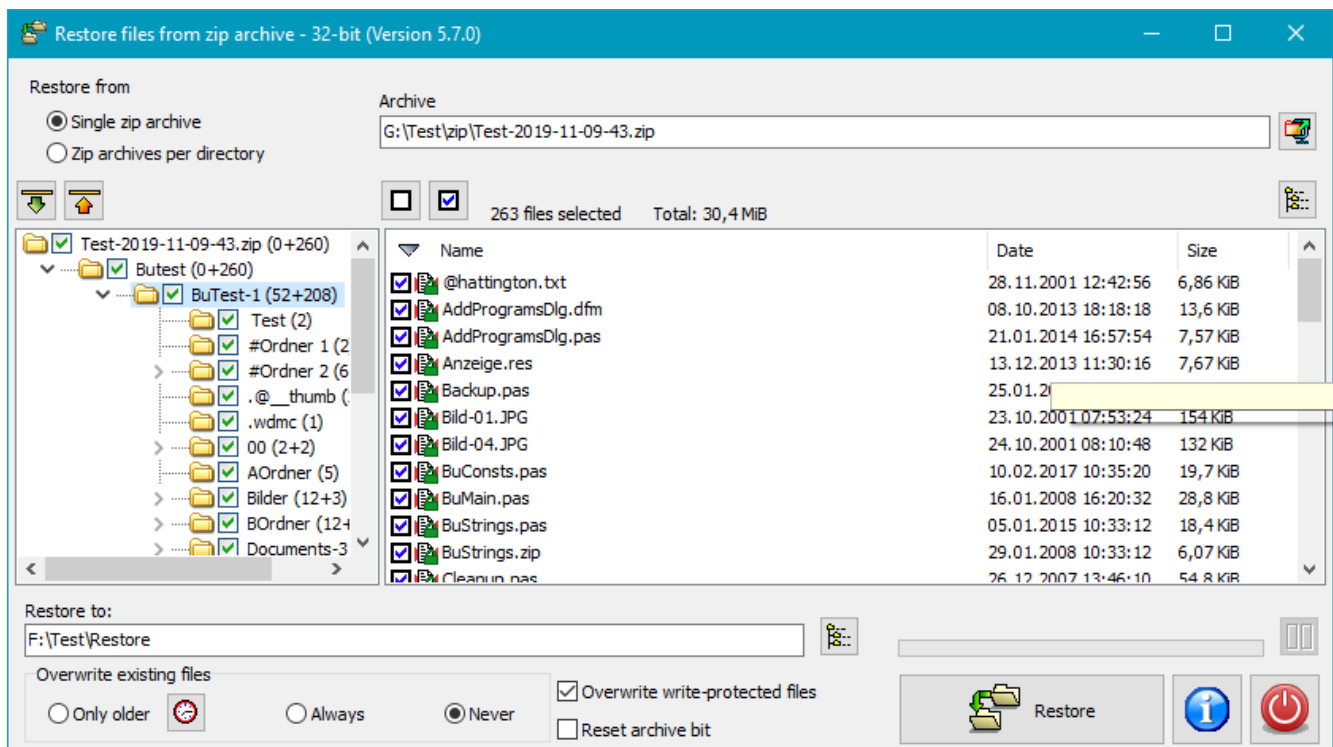
The user must specify the following items:

- **Date:** The latest version of each file relative to this date will be restored.
- **Scan only matching subdirectories:** Specify a filter pattern for the subdirectories to be scanned (e.g. *BD** for the example above). You can use *** and *?* as placeholders.
- **Only for this drive identifier:** If the backup used the mode *Separate directories for drives*, you must specify the identifier of the drive containing the files to be restored, e.g. *LwE* for files that were originally on drive *E*. If the backup was made without separate directories for drives, this field should be left empty.

After clicking the **Start** button the selected directories will be scanned to find the latest file versions. After confirmation, all files will automatically be copied to the destination directory.

Optionally you can disable the unpacking of *gz/gze* and *zip* files.

Restore files from zip archives



If the backup was placed into **one zip archive or into zip archives per subdirectory**, the files can be unpacked using any popular file archiver such as *WinZip* or *7zip*. This applies even to archives with encrypted data.

But if, in addition, also the filenames were encrypted (available since version 5.9.4), a full recovery of backed-up data is no longer possible using one of these programs ([see here](#)). The file data itself will be decrypted correctly, but the filenames cannot be recovered. In this case the use of **PbRestore** is required. The program will decrypt all directory names and filenames on reading the zip archive and will rebuild the original directory

structure.

Depending on the settings during backup, the following options are available:

- **Single zip archive:** The directory structure found in the selected zip archive and all files of the selected subdirectory are displayed.
- **Zip archives per subdirectory:** Select the desired zip archive in the root directory. All zip files in the subdirectories of the same name will be included automatically. The directory structure and all files of the selected subdirectory are displayed.

Initially, all files are selected. By clicking the checkboxes to the left of the directories and filenames, they can be alternatively excluded or included. Using one of the two buttons above the file list, all files can be deselected or selected.

In addition you can select whether files already existing in the destination directory shall be overwritten or not. If only older files shall be overwritten, you can adjust the settings for time comparison ([see here](#)). Optionally you can disable the overwriting of write-protected files and reset the archive bit of each restored file.

After selecting a destination directory, start the restore by clicking the associated button.

Click the button to the upper right of the file list to switch to **single file mode**.

Command line options:

To control the operation mode of **PbRestore**, use the following command line options:

none

The program will start in *Restore files* mode and will offer selection of single files ([see above](#))

/dir

The program will start in *Restore files* mode and will offer selection of entire directories ([see above](#))

/path:[Directory]

The program will start in *Restore files* mode and directly select the given *Directory*

/zip

The program will start in *Restore files from zip archives* mode ([see above](#))

[Filename] or [File list]

If *Filename* is a zip archive, it will be opened to **restore selected files**. In all other cases (either one file or a list of files) the **Restore files** mode will open and the specified files will be selected for restore.

J. Rathlev, 24222 Schwentinental, Germany, July 2020



Verification of backed up files



Use this function to check whether the last backup was error-free or whether files have changed since the previous backup. In contrast to **verification during backup**, each individual file at the destination will be compared to the same file at the source bit by bit.

Select the location of the backed-up files to be verified

When verifying files, you must consider how the data was backed up ([see Backup destination](#)):

- **The backup directory is on a local storage medium or on a network drive**

You can verify files backed up as single files or in zip files:

- Select the root directory if the data was saved as single files (even if compressed and/or encrypted).
- Select the zip file in the root directory if the data was saved as one zip file per subdirectory. All subdirectories must contain a zip file of the same name.
- Select a single zip file if all data was saved there.

- **The backup directory is on an FTP server**

Verification is only possible if your data was backed up as single files (even if compressed and/or encrypted).

Note: Since the option *Security copies* is not available with an FTP backup, the corresponding settings shown in the above screenshot will not be displayed.

FTP settings for Verify


Clicking the button will open a dialog to configure the FTP server connection parameters ([see here](#)):

After clicking the button, the program will connect to the FTP server and read the remote directory tree of the backup for the user to

select a subdirectory.

Compare to

Files can be compared either to files in the original source directory or to files in any other directory:

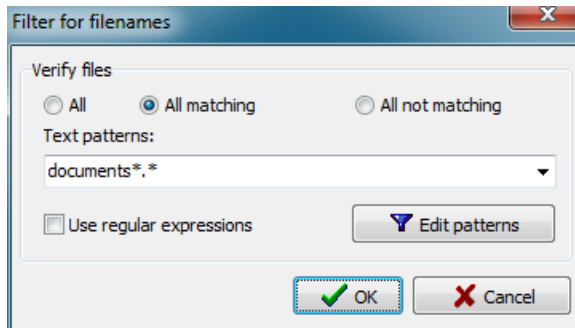
- **Source directory:** The source path will be derived from the path name of the backup folder. Comparison to files at the source is only possible if you backed up the data with the option **Drives separated**, so that drive identifiers (such as *DrvC*, *DrvD*, ...) are part of the backup directory path.
- **Selected directory:** In this case you must browse to the directory containing the files that are to be used for verification. Clicking the  button will open a dialog in which the directory can be selected.

Examine compressed single files

If the backup was made into single compressed files, enable this option to ensure that all files will automatically be unpacked on verification (default setting: *enabled*).

No decryption of *enc* files

Personal Backup adds the file extension *enc* for uncompressed encrypted files. These files are decrypted automatically on verification. If there are files from another application using this extension, the decryption will fail. You can prevent the program from decrypting such files by checking this option.



File filter

By using filename filters, filenames matching certain patterns may be included or excluded. Use the same rules as described for backup file filters (**Standard file filter** or **Regular expressions**).

File age

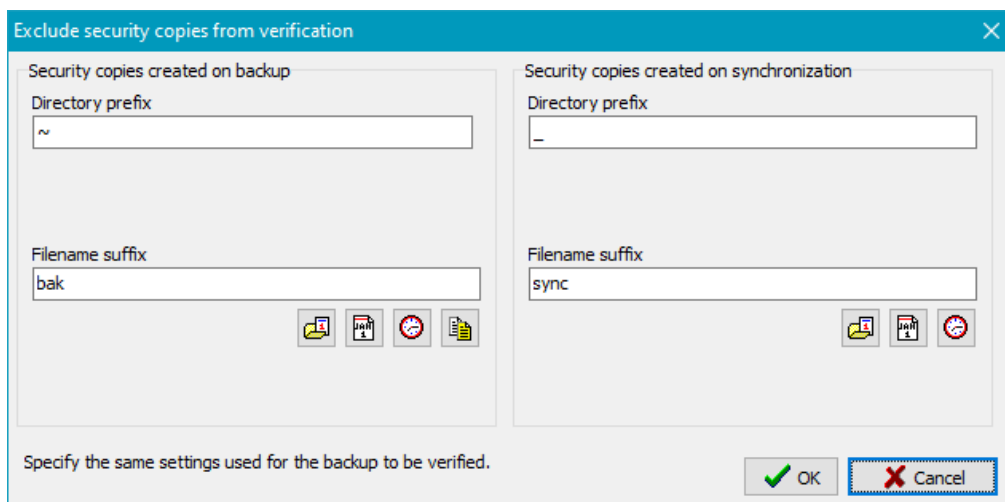
You can specify whether you want to verify only files older or newer than a given fixed or relative date.

- **Relative to actual date:** older than the specified number of back-dated days, weeks, months or years
- **Fixed date:** older or newer than the given date

Exclude security copies

If **Security copies** were created during backup, these files should be excluded from verification because they will not exist at the source, making verification impossible. Insert the same values for prefixes and suffixes as used during backup:

- **Security copies created during backup**
The option **Directory prefix** is only required if the security copies were moved to separate directory. In this case the same prefix has to be specified as used on backup.



The option **Filename suffix** must be selected if the security copies were not moved to a separate directory, but created by renaming. If placeholders were used on backup, clicking the appropriate button will insert the filter pattern needed to exclude these files. If a number of prior versions has been saved, use the upper right button to insert the counter placeholder ("#" character, e.g. *bak-#*). It is possible to make several entries separated by semicolons (e.g. *bak;bak-#*).

- **Security copies created during synchronization**

The option **Directory prefix** must be set to the same settings used for the security copies on synchronization during backup. This will apply for directories that had to be deleted during synchronization as well as for the optional selectable directory used to move files to be deleted. The option **Filename suffix** is only required if the security copies were not moved to a separate directory, but created by renaming. If placeholders were used on backup, clicking the appropriate button will insert the filter pattern needed to exclude these files.

Mail delivery after verification

Similar to the option for backups, a mail with status information and optionally a log file can be sent after performing a verification task. The **settings** are the same as for backup.


Password

Here you can optionally specify a fixed password to be used for decryption of files. In this case the user will not be prompted to enter it during verify. So a verification may be performed in background without user interaction.

By clicking the small button at the right, you can import the password from the associated **backup task**. Note that this option cannot be used if the **backup task is protected**.

The icon on the button changes to show whether a fixed password  was specified or the password has to be queried  on verify.

Import password




Clicking the  button will open a dialog to select the backup task associated to the verification. A registered **fixed password** will be imported and automatically used for verification.

Log settings

Clicking the  button will open a **dialog** to adjust the log settings for Verify.

Click then  button to view the current log.

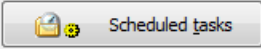
Loading and saving verify tasks

Clicking the  or  button will save a configured verify task with all settings to disk. To load and reuse such a saved task, click the  button.

A saved verify task can also be started from the **command line**. This makes it possible to use the Windows Task Scheduler to verify files at specific times, or to verify a backup directory by adding a shortcut to the Windows desktop:

```
PersBackup /verify <verify-task>
```

Automatic Verification using Windows Task Scheduler

You can configure a Windows scheduled task to carry out an automatic Verify by clicking the  button. The configuration procedure is the same as **described for backups**.

Start verification

Clicking the button will start the verification. First the directory to be verified will be scanned to count all affected files. The subsequent comparison will have one of the following results:

- **OK:** all files compared were found to be identical.
- **Warning:** one (or more) file(s) for comparison were not found at source and/or one (or more) file(s) compared were found not to be identical.

Notes on log: The result of the verification will be shown in the log as described below:

- **Short log:** only those files that failed verification (errors) will be added to the log. Optionally, also those files not found at source (warnings) will be added.
- **Long log:** all verified files will be added showing the appropriate result.
- **Extended log:** as for **Long log**, but additionally all source files used for comparison will be added.

J. Rathlev, 24222 Schwentinental, Germany, May 2020



Personal Backup Version 6

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Clean up a backup directory



From time to time you should delete obsolete files from your backup (or any other directory). Personal Backup offers the Cleanup function to perform this task automatically depending on file types and/or file age. Make sure that all files you plan to delete no longer exist in the source directory, otherwise they will be copied again during the next backup.

In addition, it is possible to delete files manually using any file manager of your choice.

Select the directory to be cleaned up

The directory from which you wish to delete files may be located on a local storage medium, on a Windows network drive or on a directory on an FTP server. Subdirectories are included automatically. By default, all files including any compressed (.gz) and encrypted (.enc) files will be deleted.

- **Local or network directory:** Clicking the button will open a dialog in which you can select the directory.
- **FTP remote directory:** Clicking the button will open a dialog in which you can configure the FTP server connection parameters ([see here](#)):

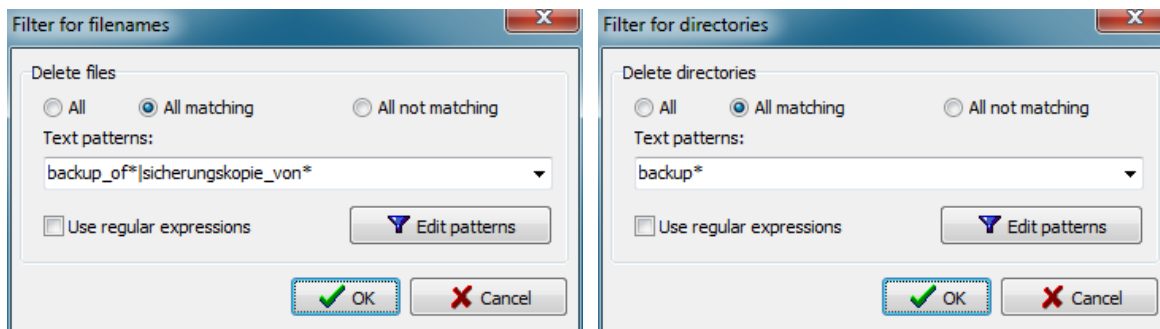
After clicking the button, the program will connect to the FTP server and read the remote directory tree of the backup for the user to select a subdirectory.

Note: In FTP mode not all of the following options are available.

Cleanup mode

- **Files:** All files in the selected directory and its subdirectories matching the given filter conditions will be deleted.
- **Root directories:** All files located in the root directories of the selected directory matching the given filter conditions will be deleted.
- **Security copies:** Only the **security copies** created during backup and matching the given filter conditions will be deleted.

File filters




Using filename filters will include or exclude filenames matching certain conditions. The same rules are used as described for backup file filters (**Standard file filter** or **Regular expressions**).

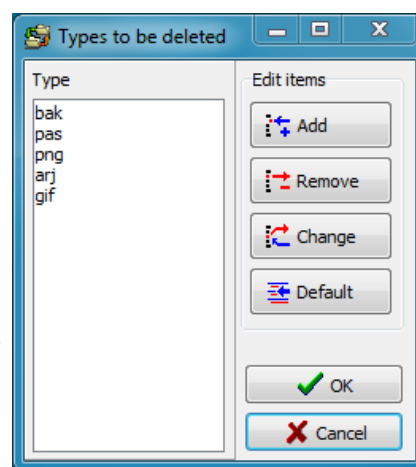
File or directory age

You can specify whether you want to delete only files or directories older or newer than a given fixed or relative date.

- **Relative to actual date:** older than the specified number of days, weeks, months or years
- **Fixed date:** older or newer than the given date

Type selection

The cleanup may be confined to selected types of files (filename extensions). You can select whether **only the selected types** or **all but the selected types** will be deleted. Clicking the  button will open a dialog to edit the list of file extensions. Extensions are specified without wildcards and dot.



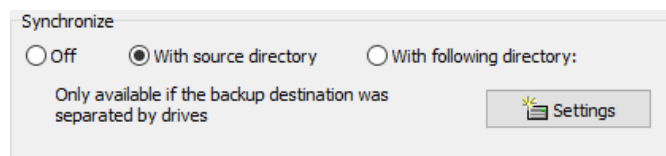
Examine compressed single files

If the backup was made into single compressed files, enable this option to remove the additional extensions *.gz/gze* or *.zip* in the file selection list (default setting: *enabled*).

Synchronize

This option is only available when deleting files. You can synchronize the backup directory with a source directory. All files not present at the source will be deleted from the backup directory. Additional **restrictions** can be made by means of **selections concerning file types and age** as described **above**. Possible settings are:

- **Off** - no synchronization, all files fitting the selections will be deleted.
Additional option: If you wish, you can restrict file deletion so as to free up a given disk space (e.g. 100 MiB). In this case, the oldest of those files fitting the filter conditions for filenames and time slots required to free the specified disk space will be selected for deletion.
- **With source directory** - this option can only be used if the selected directory was processed by a backup using the default method *Separate files - Separate directories for drives*. In this case a separate subdirectory for each source drive has been created. By default these are named *DrvC*, *DrvD*, *DrvE*, etc. ([see here](#)).
If the path of the selected directory contains one or several such drive indicators or the selected directory has subdirectories with such names, the associated source drives will automatically be determined. Click the button *Settings* to adjust the drive indicator if you used one for backup that differs from the default setting.
- **With following directory** - select a directory for synchronization



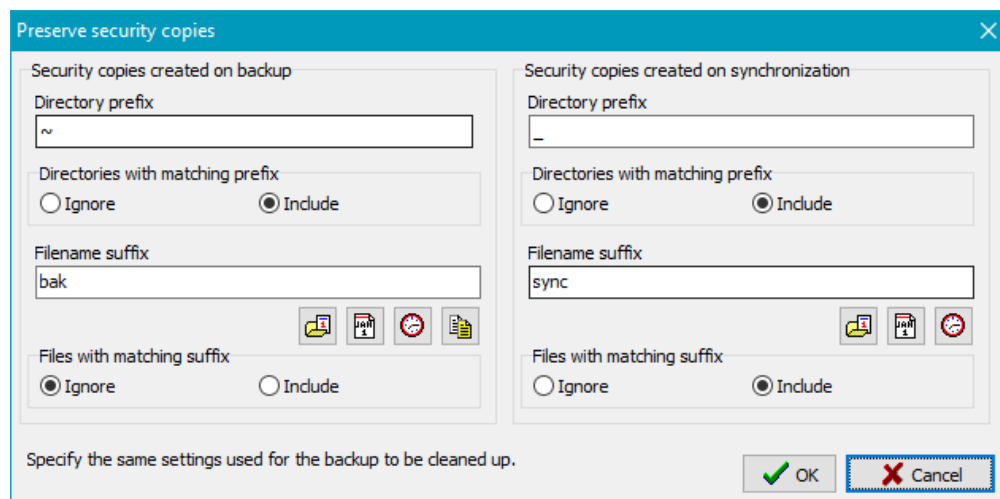
Security copies

If **security copies** were created during backup these files can be handled separately:

- **On deleting files**
Specify the same settings you used for the security copies during backup to prevent these files from being deleted.

on deleting security copies

Specify the same settings you used for the security copies during backup to select only these files for deletion.



In both cases, you can select whether to handle only security copies from backup, from synchronization or both:

Security copies created during backup

The option **Directory prefix** is only required if the security copies were moved to separate directory. In this case the same prefix has to be specified as used on backup.

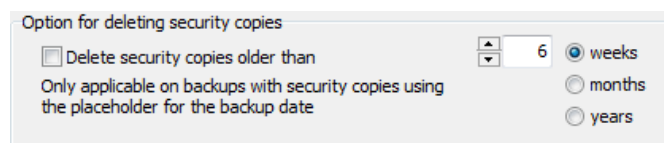
The option **Filename suffix** must be selected if the security copies were not moved to a separate directory, but created by renaming. If placeholders were used on backup, clicking the appropriate button will insert the filter pattern needed to exclude these files. If a number of prior versions has been saved, use the upper right button to insert the counter placeholder (“#” character, e.g. *bak-#*).

It is possible to make several entries separated by semicolons (e.g. *bak;bak-#*).

Security copies created during synchronization

The option **Directory prefix** must be set to the same settings used for the security copies on synchronization during backup. This will apply for directories that had to be deleted during synchronization as well as for the optional selectable directory used to move files to be deleted. The option **Filename suffix** is only required if the security copies were not moved to a separate directory, but created by renaming.

If placeholders were used on backup, clicking the appropriate button will insert the filter pattern needed to exclude these files.



Special option when deleting security copies

Check this option in case you wish permanently to delete security copies (files and directories) created during a backup when this dates back beyond a certain time (e.g. 6 months previously). To do this, on

creating the security copies it is necessary to insert the placeholder for the backup date at the end of the suffixes for files and/or directories. This date is being simultaneously the creation date of the security copies. During cleanup this date will be checked and, if older than the given date, the affected files and/or directories will be deleted. All other security copies and of course all normal files will be retained.

Entries for the directory prefixes are not required in this case, only filename suffixes must be specified in the settings (see above). Bear in mind that you must insert exactly the same value as has been used for backup. In addition you can select on which type of security copy (previous versions or on synchronization deleted versions) the deletion will be applied.

Options:


Retain empty directories - after deleting all selected files, possibly remaining empty directories will not be deleted. So the entire directory structure will be retained.


Deleted files to recycle bin - files will not be irrecoverably deleted but moved to the Windows recycle bin so that you can recover them if needed. This function is not available with a network drive or FTP directory. Please note, that it is not possible to delete files with long path lengths (more than 260 characters) with this option.

Mail delivery after cleanup




As with backups, a mail with status information and optionally a log file can be sent after performing a cleanup task. The **settings** are the same as for backups.

Log settings

Clicking the  button will open a **dialog** to adjust the log settings for the cleanup task.

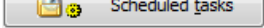
Click then  button to view the current log.

Load and save cleanup tasks

Clicking the  or  button will save a configured cleanup task with all settings to disk. To load and reuse such a saved task, click the  button.


A saved cleanup task can also be started from the [command line](#). It is therefore possible to use the Windows Task Scheduler function, for example, to remove old files from your backup periodically.

Automatic Cleanup using Windows Task Scheduler

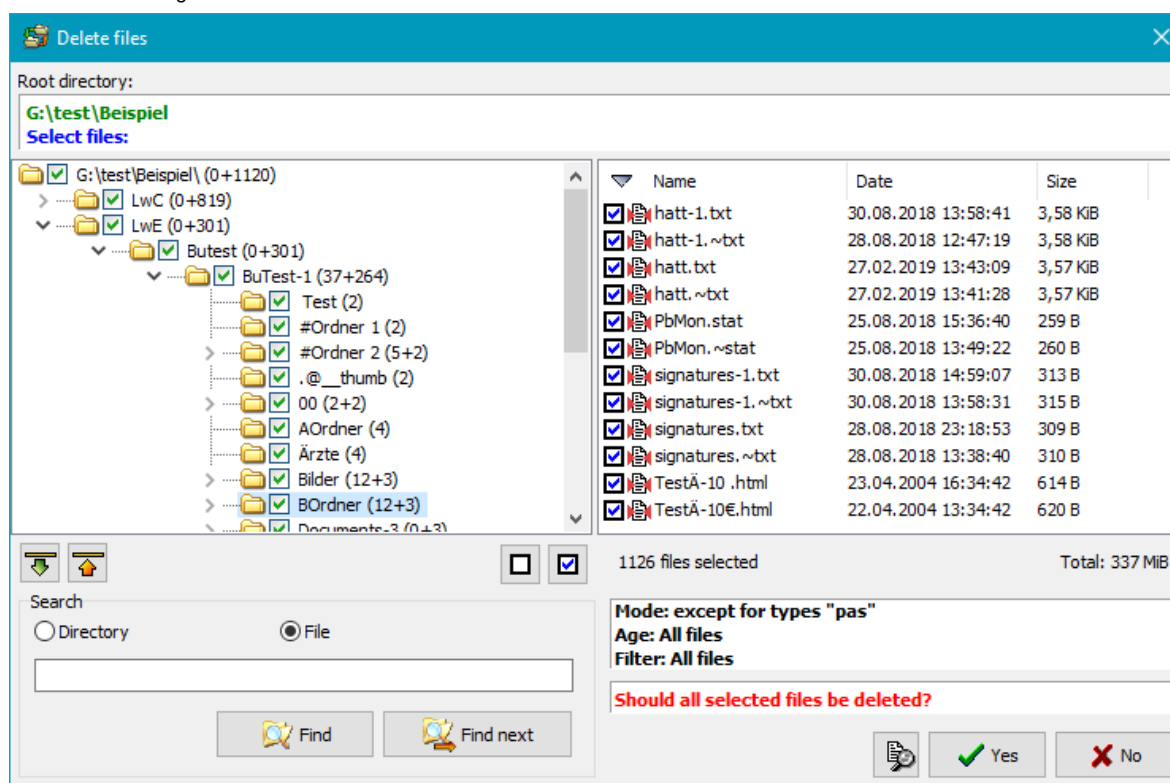
You can configure a Windows scheduled task to carry out an automatic Cleanup by clicking the  button. The configuration procedure is the same as [described for backups](#).

Start cleanup

Clicking the button will start the cleanup. Before deleting any files, the program will create and display a list of all files that match the filter conditions. If the selection is incorrect, you can cancel the cleanup at this point and adjust your settings. It is also possible to select or deselect individual files or directories by tagging the checkboxes.

A right-click on a file opens a menu for further control. The selections required for an external file viewer and a file comparison program can be made by clicking the  button:

- **View file:** If no specific viewer such as *Lister.exe* (see [Total Commander package](#)) has been selected, the Windows default file type settings will be used to start the associated program. Compressed or encrypted file will be processed beforehand.
- **Compare file:** You can use the open source program [WinMerge](#) for comparing files. Compressed or encrypted files will be processed before loading.



J. Rathlev, 24222 Schwentinental, Germany, May 2020



Command line options



Having started the program via a desktop shortcut, a batch script or having invoked it from another program (e.g. Windows Task Scheduler), you can control it by using the following command line options (note: all options can be abbreviated but must be distinct: e.g. /force = /f = /for):

Overview

/auto	/backupdir	/clean	/directory	/disable	/edit
/elevate	/erractions	/end	/force	/hide	/ini
/lang	/logmode	/logdir	/mode	/noaction	/nosound
/parallel	/portable	/prompt	/quiet	/repldrive	/restore
/reset	/showlog	/speed	/status	/stay	/suspend
/taskdir	/tempdir	/timeslot	/user	/verify	/wait
/zipname					

[Placeholders](#) [Control file](#) [Exit codes](#)

Description

Note: Parameters enclosed in square brackets are variable:

e.g. **/timeslot:[Value]** can be replaced by **/timeslot:2011521**, **log:[Value]** by **/log:2** or **/end:[Option]** by **end:shutdown**.

none:

The program will start with its normal **desktop window**.

@[OptionFile]

The command line options are loaded from the control file **[OptionFile]** ([see below](#)). If **[OptionFile]** does not contain a full path, it must be in the installation path of the program.

[TaskFile]:

The user will be prompted for the designated operation for the backup task **[TaskFile]** ([see here](#)):

- **Edit the task:** Load task and show configuration
- **Start backup:** Immediately start the backup (as with **/force**)
- **Cancel:** No further action

The file **[TaskFile]** may contain a path or a **placeholder**. If the full path is not specified, the file will be searched for in the default task directory (refer to [Preferences > Directories](#) in the control panel menu).

[TaskFile] /edit

Unlike the description above, no selection dialog will be displayed. Instead the specified task will be immediately opened for editing. If no backup task is specified, a new task will be created.

/reset

The main window will be reset to its default position and size. Optional a new task will be created. This option is useful if the program window remains invisible after starting because it lies beyond the current screen or if the program hangs when attempting to load the selected task file.

/auto:

Starts **automatic backup**. When you have activated at least one automatic backup or checked the option **Show icon in notification area**, a shortcut using the **/auto** option is inserted by the program into your **Windows Startup** folder accessible via **Windows** + **R** *shell:startup*.

Personal Backup will be started automatically when the user logs on and will check if any automatic backups are registered. Tasks to be executed after logon will be started immediately. If more tasks are pending on the same day (e.g. at a fixed time or on logoff), the program will remain running in the background and a small **icon is displayed** in the Windows notification area. Otherwise the program will be closed.

/stay:

This option will only work in connection with **/auto**. If specified in the command line, the program will remain running in the background even if no more backups are pending on the same day.

#[n] /force:

Using this option, backups configured for **automatic execution** can be started unscheduled.

#: Will immediately start all activated backups.

#0: Will immediately start all backups selected as *By request*.

#n: Will immediately start the backup from the list of **automatic backups** matching the specified number *n*, e.g. **#1 /force**.

Unless specified otherwise in the command line (e.g. by **/prompt:error** for the status window), the settings of the **automatic backup** will be assumed.

[Filelist] /force:

Starts a backup of all tasks specified in the list of files (**important note**). The backups will run one after another in the given order. The filenames may contain a **placeholder**. The default extension (**bu**) is appended automatically.

The option "**[Filelist] /force**" is very useful in connection with Windows Task Scheduler, in that it is possible to execute several backup tasks at preset times.

Example: PersBackup.exe C:\Backup\BackupA.buj C:\Backup\BackupB.buj /force

/parallel

This option will only work in connection with **/force** and if a file list containing more than one backup task is specified. These will be started in parallel and run simultaneously. Without this option, the backup tasks will be started one after another (see above). A subsequent action, like **shutdown** or transferring into **standby**, will be executed not before all backups have finished.

[Filelist] /restore:

The Restore tasks specified in **[Filelist]** (e.g. Rest-1 Rest-2, **important note**) will be started. The filenames may contain a **placeholder**. The default file extension (**rs**) is appended automatically. Prior to this, you must have configured and saved the Restore tasks (see **Restore data from backup**).

[Filelist] /clean:

The Cleanup tasks specified in **[Filelist]** (e.g. Clean-1 Clean-2, **important note**) will be started. The filenames may contain a **placeholder**. The default file extension (**cu**) is appended automatically. Prior to this, you must have configured and saved the Cleanup tasks (see **Clean up the backup directory**).

[Filelist] /verify:

The Verify tasks specified in **[Filelist]** (e.g. Verify-1 Verify-2, **important note**) will be started. The filenames may contain a **placeholder**. The default file extension (**vf**) is appended automatically. Prior to this, you must have configured and saved the Verify tasks (see **Verification of backed up files**).

/timeslot:[Value]

Value specifies a time slot. Only matching files will be backed up. By default, the modified timestamp is used for comparison. Optional the creation time stamp can be selected by a preceding **c**.

yyyymmdd

Only files changed on the specified date will be backed up (e.g. **/timeslot:2011521** = 21 May 2011).

yyyymmdd-yyyymmdd

Only files changed between the specified dates will be backed up (e.g. **/timeslot:20100521-20110315**

= May 21. 2010 00:00 - 15 March 2011 24:00).

+yyyymmdd

Only files changed after the specified date will be backed up (e.g. */timeslot:+20110521* = since May 21. 2011 00:00).

-yyyymmdd

Only files changed before the specified date will be backed up (e.g. */timeslot:-20110521* = before May 21. 2011 24:00).

thnn

Only files changed after the specified time on the current day will be backed up (e.g. */timeslot:t0835* = today after 08:35).

ox

Only files changed more than x days ago will be backed up (e.g. */timeslot:d14* = older than 14 days).

dx

Only files changed within the last x days will be backed up (e.g. */timeslot:d14* = within last 14 days).

u

Only those files will be backed up that have changed or were newly-created since last backup of the specified task.

q

When the backup starts, a dialog window will be displayed in which an individual time slot (e.g. */timeslot:q*) can be set.

c...

If one of the above options is preceded with **c**, the creation timestamp will be used for comparison instead of the modified timestamp (e.g. */timeslot:c+20110521* = files created since May 21. 2011 00:00)).

Note: **yyyy** = year, **mm** = month, **dd** = day, **hh** = hours, **nn** = minutes, **x** = number of days

/end:[Option]:

Defines which action is to be carried out after running the tasks specified in the command line (see above):

shutdown

After completing the tasks, the system will be shut down and the computer switched off. This will even function if the user executing the program is not logged on interactively (e.g. on locked screen).

Example of use: If you often wish to carry out a backup before shutting down your computer, create a shortcut on your desktop using this command line option. To back up and shut down, double-click this shortcut ([see here](#)).

lockdown

The function is the same as *shutdown*, but the lock screen will be enabled immediately to preclude access to the computer by unauthorized persons.

idleoff

The function is the same as *shutdown*, but the computer will only be shut down if no user is logged on interactively at all.

This option only makes sense if used in a command line to start the backup from the Windows Task Scheduler because this can be done without having a user logged on. The computer will only be shut down after the backup if in the meantime no user has logged on.

poweroff

After completing the tasks, the system will be shut down and the computer switched off. This will only function if the user executing the program is logged on interactively.

hybrid

After completing the tasks, the system will be shut down and the computer will be put into hybrid sleep mode (available since Windows 8). This will only function if the user executing the program is logged on interactively.

restart

After completing the tasks, the system will be shut down as using the option */shutdown* and then restarted automatically.

logoff

This option is similar to **/poweroff**, but just logs the current user off once the backup is completed.

Notes:

1. You can omit `/force` in connection with `/end:[Option]`.
2. During the backup, the selected option will be displayed in the status window and can be changed there by the user. This can be prevented by using the additional command line option `/noaction` (see below).

`/suspend:[Option]`

Puts the system into suspension after Backup, Restore or Cleanup (see above):

standby

The system is put into standby mode: data remains in RAM but is not saved. In this mode, system wake up is quick, but data will be lost on power failure.

hibernate

The system is put into hibernate mode: RAM data is saved to disk. In this mode, system wake up takes longer, but no data will be lost on power failure.

Notes:

1. A requirement for a password on wake up can be set via Power Options in Control Panel.
2. During the backup, the selected option will be displayed in the status window and can be changed there by the user. This can be prevented by using the additional command line option `/noaction` (see below).

`/erractions:[Option]`

Use this option to specify whether an intended action (`/end:[Option]` or `/suspend:[Option]`) will also be carried out if an error occurred during backup. `[Option]` is a value between 0 and 31 whereas the following options can be combined in any way:

- 0** The action will be carried out under all circumstances (as if no option is specified)
- 1** The action will not be carried out if the task file is not found
- 2** The action will not be carried out if the destination is not accessible
- 4** The action will not be carried out if the source directory is not found
- 8** The action will not be carried out if the task configuration is invalid
- 16** The action will not be carried out if any other error occurred during backup (e.g. an error on copying a file)

To combine the options, just add the above values, for example `1+4+16=21` (`/erractions:21`) would avoid a shutdown if the task file or the source directory is not found or another error occurred during backup.

`/noaction`

If this option is specified, the user cannot select another action during backup to be performed afterwards (e.g. *power off* or *standby*: see more [here](#)).

`/prompt:[Option]`

Defines how dialog and status windows are displayed during backup. The settings are similar to those for **automatic backups**.

wait Wait for user prompt.

delay Close status window after a short delay (default).

error User prompt will be required on errors. Otherwise the window will be closed after a delay.

quiet Display no progress and status windows (see [/quiet](#)).

silent Display no progress window, status window only on errors.

`/quiet`

Starts the backup as a background task. No **progress window** is displayed. To inform you that a backup task is running, an animated icon appears in the notification area. You can click this icon to check progress.

/hide

Suppress the splash screen on startup.

/nosound

No sounds are played, e.g. at the end of a backup.

/status:[Option]

Defines how the **status window** showing the progress and outcome of the current action (e.g. Backup) will be displayed on the desktop.

normal The status window will be displayed in the foreground after starting the action. If another applications is activated, it is moved to the background until the user reactivates the program by clicking the task bar button or has to respond to a user prompt.

behind The status window will remain in the background until the user reactivates the program by clicking the task bar button or has to respond to a user prompt.

ontop The status window will always be displayed in front of all other applications.

/speed:[Option]

Defines the priority of the file copying processes with respect to other applications.

fast File copying is carried out using a higher priority than normal.

slow File copying is carried out using a lower priority than normal.

/elevate

When using this option, on program start the Windows User Access Control will prompt for an elevation of user privileges. This is for example required to use **Volume Shadow Copies**.

/user:[Name]:[Password]

If using a backup destination on a network drive that requires a different user account, you can specify the name and password of this user.

/ini:[Filename] or /ini:[Directory]

The user configuration (amongst others the settings for automatic backups) is saved in the file **PersBackup.ini**. This file is located by default in the Application Data directory of the user:

- **Vista, Windows 7,8 and 10:** `C:\Users\<Username>\AppData\Roaming\PersBackup6`
- **Windows XP:** `C:\Documents and Settings\<Username>\Application Data\PersBackup6`

Using this option you can select an alternative configuration file in the default directory (e.g. `/ini:pb.ini`) or at any other location. For this, a full path must be specified (e.g.

`E:\MyBackupConfiguration\Backup-1.ini`). If only a directory is given, the default name **PersBackup.ini** will be added automatically.

The log files are located in the same directory (using the second example:

`E:\MyBackupConfiguration\Backup-1.log`). If **Filename** contains a full path, the file holding the settings for the selected language and the program updates (**PersBack.cfg**) will also be saved in this directory (e.g. `E:\MyBackupConfiguration\PersBack.cfg`). **Filename** may contain a **placeholder**.

/taskdir:[Directory]

Directory specifies a special path to the task files. This replaces the default path in *My Documents*. When starting the program from a USB stick, for example, you should use this option together with **/ini:..** to save the task files by default on the stick. The filename may contain a **placeholder**.

Example: `persbackup.exe /i:%progpah%\pb5-1.ini /t:%progpah%`

/portable

Using this option, **Personal Backup** will be started in a way that no traces will be left behind on the PC. This is for example recommended if a backup is to be executed from a USB stick. First, copy all files from

the program directory (usually *C:\Program Files\Personal Backup 6*) or the downloadable zip file to a directory on the USB drive (e.g. *K:\PersBack*). If you were now start the program *PersBackup.exe* from there, all program settings, the backup tasks and the log files would be saved in several subdirectories of the logged on user ([see more](#)). Using the option */portable* will cause all these files to be redirected to the directory on the USB stick from where the program was started. Using the example given above, the following locations would be used for an installation in *K:\PersBack* :

- The **ini file** in the directory *K:\PersBack*.
- The **task files** in the directory *K:\PersBack\tasks*
- The **log files** in the directory *K:\PersBack\logs*

To start the program with this option, you can use a batch file or a shortcut containing this line

```
K:\PersBack\PersBackup.exe /portable
```

To install the program on an external drive, it is recommended to use the provided **zip file**.

/zipname:[Name]

When backing up into zip files, **Name** is used for the zip files instead of the name defined in the task.

/dir:[Directory]

With this option, a backup of the directory **Directory** will immediately be started. For this, the settings for the first directory to be saved from the task specified in the command line are used. If no task is specified, the settings from the task selected as the **default backup task** are used. If no such task has been selected, the user will be prompted to select an appropriate task for this purpose

/backupdir:[Directory]

If **Directory** is a full path (e.g. *G:\Backup*), it will be used instead of the destination path defined in the task. If it is a relative path (e.g. *Test\Diff*), an additional subdirectory will be created beneath the destination folder defined in the task, hence it is possible to configure backup schedules using Windows Task Scheduler. This option is used by the program addon *PbPlaner*.

/mode:[full|diff|incr]

This option overrides the settings of the specified backup task and carries out a full, differential or incremental backup within a backup schedule.

/repldrive:<Dr>=<UNC-Path>

This option will replace with a UNC path the drive specification in source paths. The purpose is to have access to the snapshot created by the program **Volume Shadow Copy Simple Client** for backup.

Example for use in a batch file: *Persbackup.exe /repldrive:C=%1 (example)*

/lang:[xx]

Select the user language. The command line option overrides the setting from the control panel menu (**Language**).

xx = de	German	xx = it	Italian	xx = nl	Dutch	xx = ru	Russian
xx = en	English	xx = es	Spanish	xx = hu	Hungarian		
xx = fr	French	xx = pt	Portuguese	xx = pl	Polish		

/logmode:[n]

This setting overrides the log file settings from the task. The value **[n]** specifies the log type:

0	No log
1	Short log
2	Long log
3	Verbose log (for debugging purposes)

11, 12 and 13 Short, long or verbose log. An existing log file will be deleted before.

/logdir:[Directory]

Directory specifies a special directory for the backup logs. If no full path is specified, a new subdirectory **Directory** will be created relative to the **task directory** (default location for log files [see above](#)).

/showlog

[Logname] /showlog

Either the program default log or the specified log file will be displayed.

/tempdir:[Directory]

Directory specifies a special directory for the temporary files. If no full path is specified, a new subdirectory **Directory** will be created relative to the **task directory** (default location for temporary files [see here](#)).

/wait:[n]

When a backup has been completed, a **status window** is displayed for a short, preset time (see **Preferences View** in the control panel menu). With this option, the preset time can be set also in the command line (e.g. with tasks to be carried out immediately, using **/force**). The value of **[n]** is entered in seconds, with the value 0 meaning that the status window must be closed by the user.

/disable

No entry is created in the Windows Startup folder accessible via the Start menu.

Important note: The filenames must be separated by a spaces. **If a filename or file path contains spaces, it must be enclosed by quotation marks.**

Examples:

1. Start backup task (Filename: B-Task1.buj):

Command line: "%ProgramFiles%\Personal Backup 6\Persbackup.exe" B-Task1 /force

2. Start backup task and shut down: (Filename: B-Task2.buj):

Command line: "%ProgramFiles%\Personal Backup 6\Persbackup.exe" B-Task2
/end:poweroff

3. Start cleanup task (Filename: L-Task.cuj):

Command line: "%ProgramFiles%\Personal Backup 6\Persbackup.exe" L-Task /clean

Placeholders for paths

You can use the following placeholders in the command line (all paths refer to Windows 7):

- **%perspath%**: Path to the folder **My Documents** (C:\Users\\Documents)
- **%appdata%** or **%apppath%**: Path to user's **Application Data** (C:\Users\\AppData\Roaming)
- **%localappdata%**: Path to the user's **Local Application Data** folder (C:\Users\\AppData\Local)
- **%programdata%** or **%allusersprofile%**: Path to the **Program Data** folder (C:\ProgramData)
- **%public%**: Path to the **Public** folder (C:\Users\Public)
- **%programfiles%** or **%progfiles%**: Path to the **Program Files** folder (C:\Program Files)
- **%commonprogramfiles%**: Path to the **Common Program Files** folder (C:\Program Files\Common Files)
- **%programfiles(x86)% ***: Path to the **32-bit Program Files** folder (C:\Program Files (x86))
- **%commonprogramfiles(x86)% ***: Path to the **32-bit Common Program Files** folder (C:\Program Files (x86)\Common Files)
- **%profile%**: Path to user's **Profile** folder (C:\Users\)
- **%desktop%**: Path to the user's **Desktop** folder (C:\Users\\Desktop)
- **%favorites%**: Path to the user's **Favorites** folder (C:\Users\\Favorites)
- **%progpather%**: Path to the installation folder of **Personal Backup** (default: C:\Program Files\Personal Backup 6).

- **%username%**: Name of the logged-in **User**
- **%computername%**: Name of the **Computer**

* only available on 64-bit systems

Examples:

for **Ini-File** in **C:\Program Files\Personal Backup 6**:

```
Command line: "%ProgramFiles%\Personal Backup 6\Persbackup.exe"
"/i:%progpath%\pb.ini"
```

for **task** in **C:\Users\username\Documents\PersBackup**:

```
Command line: "%ProgramFiles%\Personal Backup 6\Persbackup.exe"
/i:%perspath%\PersBackup\backup-1
```

Note:

When using placeholders in a batch file the "%" characters must be duplicated (e.g. . .

```
/i:%%progpath%\pb.ini
```

Control file:

You can write all options line by line to a file instead of to the command line itself: each line must contain one option or filename. All text behind a semicolon is handled as comment. **Do not use quotation marks** on paths containing spaces.

Example: (referring to Windows 7)

```
/ini:C:\Program Files\Personal Backup 6\pb61.ini ; alternate ini file
/logmode:2 ;create long log
/wait:1
/hide
/quiet
/force
; Backup tasks:
C:\PersonalBackup\backup-1.buj
C:\PersonalBackup\backup-2.buj
```

Exit codes

Starting Personal Backup using the command line with one of the options **/force**, **/restore** or **/clean** will deliver an **ExitCode** to the calling application on termination. In a batch file this can be retrieved using the variable **ErrorLevel**. The following values are used:

- 0 No error
 - 1 Task file not found
 - 2 Destination not accessible
 - 3 Source directory not found
 - 4 Other error (e.g. error on copying files)
 - 5 Canceled by user
 - 6 Invalid task configuration
-

J. Rathlev, 24222 Schwentimental, Germany, August 2020








Keyboard shortcuts








The following shortcuts will call the main functions of the program directly. The shortcuts are independent of your language setting.

Control panel

Keyboard shortcut	Alternative	Function
	1	Num 1 Open the 1st automatic backup task
	2	Num 2 Open the 2nd automatic backup task
	3	Num 3 Open the 3rd automatic backup task
	4	Num 4 Open the 4th automatic backup task
	5	Num 5 Open the 5th automatic backup task
	6	Num 6 Open the 6th automatic backup task
	7	Num 7 Open the 7th automatic backup task
	8	Num 8 Open the 8th automatic backup task
	9	Num 9 Open the 9th automatic backup task
	0	Num 0 Open the 10th automatic backup task
 + 	1	Num 1 Open the 11th automatic backup task
	2	Num 2 Open the 12th automatic backup task
	3	Num 3 Open the 13th automatic backup task
	4	Num 4 Open the 14th automatic backup task
	5	Num 5 Open the 15th automatic backup task
	6	Num 6 Open the 16th automatic backup task
	A	Show and edit backup time schedules
	B	Show backup tasks
	P	Automatic backup with Windows Task Scheduler
	R	Restore backed-up files
	V	Verify backed-up files
	C	Clean up directories
	E	Edit task directly: Backup, Restore, Verify, Cleanup
	B	Start backup
	L	Show backup log
	R	Start restore
	V	Start verification
	C	Start cleanup
		Move list entry up
		Move list entry down

	Help overview
	Specific help
	Update Windows Task Sheduler view
	Open menu
	Close program or standby if automatic tasks are active

Backup task

Keyboard shortcut Function		
	T	Select the destination directory
	D	Add a directory to be backed up
	B	Show directories to be backed up
	S	Edit task settings
	O	Edit task options
	U	Select subdirectories
	F	Selection of files
	Y	Select file types
 +	D	Edit subdirectory filter
	A	Apply subdirectory filter
	F	Edit file filter
	Y	Edit type filter
	Update view	
	Back to the control panel	

J. Rathlev, 24222 Schwentimental, Germany, January 2020



Alternating backup schedules



Basics

A professional backup normally uses alternating backups. To save time and disk space a full backup is not performed every day (or at any other interval). For example a full backup would only be run once a week with differential or incremental backups on other days. Thereby the backups will use separate directories for each day. With differential or incremental backups only those files are saved that are new or have changed since the last backup, the criterion being the state of the archive bit of each file (see [file attributes](#)). This bit will be set by the system automatically on writing the file. During a full backup, all archive bits of successfully backed-up files will be reset, hence it is possible to determine which files have been changed since the last backup. The *differential* and *incremental* methods differ in the following way:

Differential

All files with the archive bit set will be backed up. The archive bit will remain *unchanged*.

Incremental

All files with the archive bit set will be backed up. The archive bit *will be reset*.

This has the following effect when **restoring** files:

Alternating schedules using differential backups

First of all, the last differential backup is to be restored, followed by the last preceding full backup without overwriting any files.

Alternating schedules using incremental backups

First, all incremental backups are to be restored in reverse order without overwriting any files, followed by the last preceding full backup without overwriting any files.

Restoring is easier and faster with differential backups, but an incremental backup requires less disk space.

Alternating backups using the internal function of the program

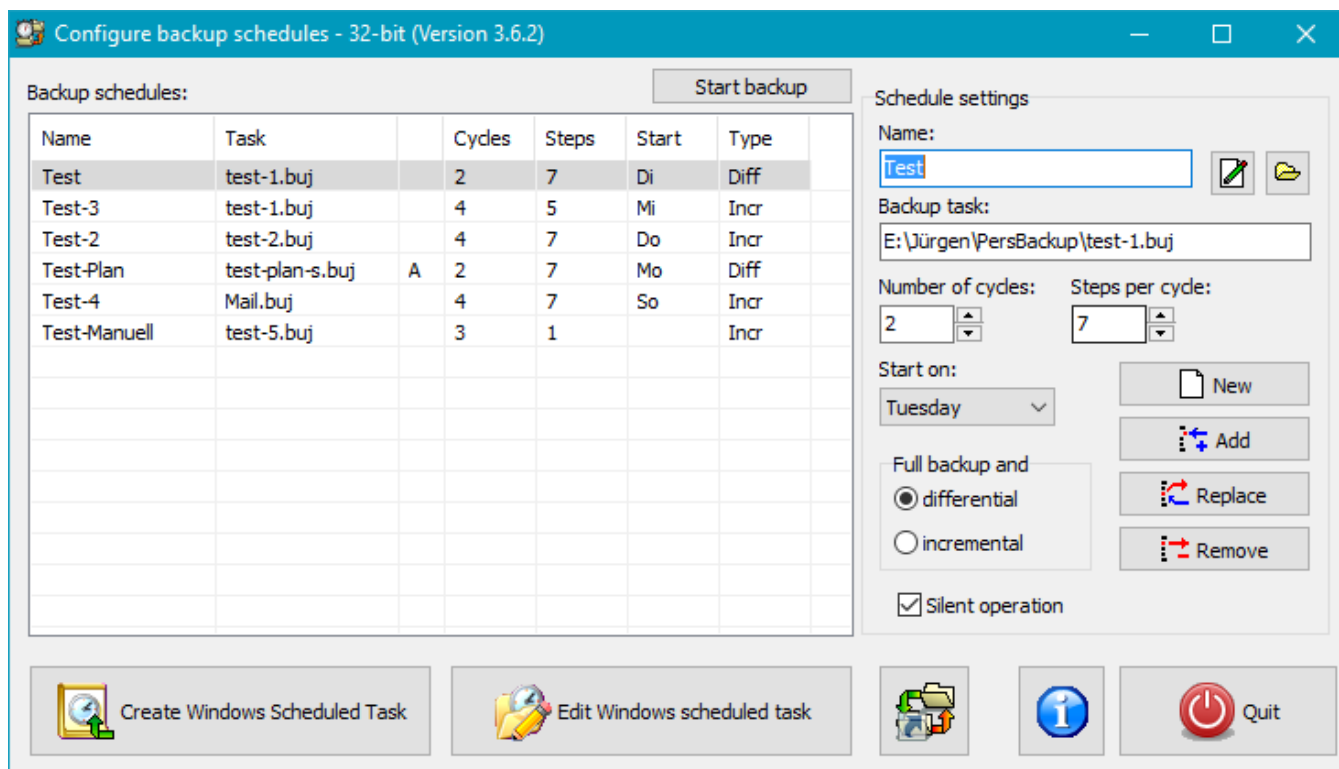
For more details refer to [Automatic backups](#).



Alternating backups using Windows Task Scheduler

Another way to start backups automatically is to use Windows Task Scheduler ([more ..](#)). This method has some advantages especially when implemented on a server (reduced usage of resources, runs with any user account). To create alternating backups with this function in a convenient way, I developed the utility program **PbPlaner** (see screenshot below). It is part of the distribution package of **Personal Backup** (see *Windows start menu All Programs Personal Backup*).

Important note: The current **PbPlaner** version requires Windows Task Scheduler version 2 which has been available since Windows Vista. Hence, the program cannot be used under Windows XP any more.



You can configure several alternating backups using this program. Their properties are displayed as a list. If the third column shows an **A**, the associated schedule is registered in Windows Task Scheduler ([see below](#)).

To edit a plan click on the appropriate line, make the required changes in the fields on the right and apply these by clicking the **Replace** button. Upon this, the selected plan will be reset to start.


To edit the **backup task** double click on the appropriate line or the button at the upper right.

To create a new plan, click **New** to clear all fields, make your desired settings and click **Add** to append the plan to the list.

To remove a plan from the list, select it and click **Remove**.

Settings:

Name: Save the plan to the list under this name.

Backup task: Click the  button to select a backup task previously configured with **Personal Backup**, provided that it is not designated there as an automatic task. **PbPlaner** will then take over management of the alternating destination directories.

Number of cycles: Specify the number of cycles each consisting of one full and several differential or incremental backups.

Note: The product of cycles and steps must not exceed the value of 99.

Steps per cycle: Specify the number of backups within one cycle (including the full backup).

A cycle of 7 backups is a special case, in that the backups will be coupled to the days of the week.

Start on: When a cycle of 7 backups is selected, you can specify the day of the week on which the full backup is to be performed.

Full backup and ...: The full backup always uses the settings established in the backup task: *Update* or *Full (new)* ([see also here](#)). Select the **differential** or **incremental** backup mode for the additional backups within a cycle.

Silent operation: If this option is selected, no notifications or error messages are displayed on the desktop during backup. Instead, you can retrieve this status information using Windows Event Viewer.

Create Windows scheduled task

Click this button (at the bottom left of the screenshot) to add the selected alternating schedule to Windows Task Scheduler ([more ..](#)). Click the adjacent **Edit Windows scheduled task** button to edit the settings of an existing scheduled task.

Create a Desktop shortcut

If the schedule is not to be executed by time control but manually, you can create a Desktop shortcut for the selected alternating schedule. Double-clicking this shortcut will run the step due for execution. This might happen several times a day, in which case the user will be prompted to confirm the backup is indeed to be repeated (see the command line option `/interact` described further below).

Command line options

Having started the program started e.g. from the Windows Task Scheduler, you can control it by setting the following command line options:

none:

The program will start with its normal desktop window.

[TaskFile]:

The schedule named [*Schedule*] will be opened and the next due backup is started. If it contains spaces, it must be enclosed by quotation marks.

/interact

This option will be automatically applied if a shortcut (see above) is created. Starting the program with this option will prompt the user each time as to whether this backup is to be run again on the same day. The option *Silent operation* above mentioned must also be disabled.

If this option is not specified, e.g. on starting via the Windows Task Scheduler, each backup will run only once a day.

/delay:[n]

Specifies the time after which the status window will be closed automatically. The value of [n] is entered in seconds, with the value 0 meaning that the prompt must be closed by the user.

/ini:[Filename]

The settings for the configuration of the alternating schedules are saved in the file *PbPlaner.ini*. This file is located by default in the Application Data directory of the user:

- **Windows 7, 8 and 10:** *C:\Users\<Username>\AppData\Roaming\PersBackup6*
- **Windows XP:** *C:\Documents and Settings\<Username>\Application Data\PersBackup6*

Using this option you can select an alternative configuration file at any other location (e.g.

/ini:E:\MyBackupConfiguration\Sched.ini).

Important note


Changing an alternating schedule already designated as a scheduled task will directly affect the next backup.

Be careful when selecting the dates for your backups: they must match the settings for the alternating schedule. If you chose a cycle coupled to the **days of the week** (i.e. a cycle of 7 backups), the backup must **start every day** at a selectable time. All other modes allow any time interval to be chosen.

Step-by-step guide

The following guide will help the user understand how the program works.

Configure an alternating schedule

1. Click the **New** button: all settings will be reset to their initial values.
2. Insert a **Name** for the schedule under which it will be saved and displayed.
3. Enter a backup task previously configured with **Personal Backup**: clicking the  button will open a dialog box for selecting the desired task.
4. Insert the number of full backups to be performed as **Number of cycles**: each cycle starts with a full backup followed by several differential or incremental backups. Each step is allotted its own subdirectory at the destination. After the last cycle, each subdirectory in turn will be overwritten.
5. The value *n* for **Steps per cycle** determines the number of backups within a cycle consisting of one full and *n-1* differential or incremental backups.
6. If weekly cycles are selected (i.e. a cycle of 7 backups), the day for the full backup can be chosen. The cycle will then start (with its full backup) on the chosen day of the week as soon as this next occurs.
7. Finally, the new schedule must be added to the list using the **Add** button.

This completes the configuration of an alternating schedule. You can configure as many such schedules as you wish, but to implement these, each must be added as a Windows scheduled task.

Activate an alternating schedule

1. Select one of the preconfigured schedules by clicking on the list.
2. Click the **Create Windows scheduled task** button.
3. The **wizard** for configuring Windows scheduled tasks will open. All necessary Windows entries will be made by the program automatically.
4. If you wish, you can adjust the settings for *Priority*, *Log* and *Subsequent action*.
5. After clicking the **Next** button, the time schedule can be configured. Most required entries are self explanatory (**details ...**).
6. Another click on the **Next** button opens the dialog for specifying the name of the user whose credentials are to be used

to start the backup. This must be an account with a valid password ([details ...](#)).

7. Clicking the **Done** button will activate the Windows scheduled task.

It is possible to edit the time schedule either by clicking the **Edit Windows scheduled task** button in **PbPlaner** or by using the Windows functions reached via *All Programs* *Accessories* *System Tools* *Task Scheduler* or via *Control Panel* *Administrative Tools* *Task Scheduler*

J. Rathlev, 24222 Schwentimental, Germany, August 2020



Personal Backup Version 6

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Start Backup under different account



- Overview
- Prerequisites
- The utility program PbStarter



Overview

Since version 5.8 **Personal Backup** contains the **utility program PbStarter**. This can be used to run backups under a user account different from that of the logged-on user. You will find the utility in the Windows start menu as **Personal Backup - Backup under different account**. The purpose of this program is to provide **additional protection against malware** that maliciously encrypts a user's data including the backed-up files and demands a ransom in return for the decryption key (so-called **Ransomware**).

The best way to protect your backed-up data is to use a backup directory where all logged-on users only have read permissions in that any program started under their user account cannot write into the directory containing the backed-up data and hence nothing can be changed there. To achieve this, a new user account must be created via Windows Control Panel. This new account will only be used to perform backups and is the only account that can write to the backup directory. No other activities should be performed under this account.

Important prerequisite: To adjust the permissions of the backup directory, it is essential that the drive or the drive partition that holds the backup directory is formatted in **NTFS** (Windows default). The FAT32 file system often used for USB sticks will not allow permissions to be changed.

To run a program under a different user account, you can use the Windows console application *RunAs*, but it cannot save passwords and requires an entry of the password on starting each backup. In addition, compiling the desired configuration is a difficult task even for experts. In contrast, **PbStarter** can save the required password as an encrypted string which will enable any user to start a secure backup even without knowing this password. Entering the password is only done once during backup configuration by an authorized user. In addition, by providing a graphical interface, the configuration of backups becomes clear and easy.

Prerequisites

Before you can use this procedure, some prerequisites will be necessary. To make this comprehensible to any layman, it will be described step by step as follows. Bear in mind that there are some minor differences between Windows versions 7, 8 and 10. Particularly in *Windows 10 Home* several settings, like allocating users to local groups, are not available. For this purpose at least the *Pro* version is required.

Important preliminary note:

The following has been compiled carefully, but the author assumes **no responsibility for the topicality, correctness, completeness or quality** of the information provided. Every user should be aware of the **risks** involved in **changing system settings**. **Liability claims** against the author whether material or non-material caused by the use of the information provided shall be **rejected**.

Setting and adjusting the accounts

Unfortunately, the **user account initially created** during Windows installation is automatically granted **administrator rights** by default. However, for all **normal activities** on your computer (mail, Internet, text processing, image processing, etc.), this is not required at all. In fact, it is no problem to install new programs or change system settings even if you are logged on as a normal user. As soon as elevated rights are required, Windows User Access Control will pop up automatically and prompt for a temporary logon as Administrator. Therefore, it is strongly recommended that only those rights needed to carry out their tasks be assigned to users. These can be separated into three groups:

- **Administrators** for the installation of programs and to adjust system settings
- **Standard users** for daily work
- **Backup users** with special permissions to perform backups

Following this concept, some initial adjustments to user accounts are necessary:

1. **Activation of the default administrator account:**

After a new Windows installation, the default administrator account initially remains deactivated. Call *Administrative Tools* on the *Windows Control Panel* and double-click on *Computer Management*. Click on *Local Users and Groups* in the tree on the left and then on *Users*. Double-clicking on *Administrator* opens the *General* tab in the property editor. Uncheck the box *Account is disabled* and then click *OK*. Right-click on *Administrator*, select *Set Password...* and then *Proceed*. You can ignore the warning at this point because this account has never been used before. Then enter a **reasonably complex password** (twice) and keep this in a safe location. Finally, close *Computer Management* and return to *Windows Control Panel*.

2. **Additional administrator account:**

to be on the safe side, another administrator account using a name at will should be created. Call *User Accounts - Manage another account* on the *Windows Control Panel*. Click on *Add a new user in PC settings* and *Add Account*. Do not use the option to use an online account at Microsoft at this point. Click instead *Sign in without a Microsoft account (not recommended)* and *Local Account*. Enter any suitable name and the password (twice). It is very useful to enter the same password as used by the normally logged-on user to make it easy for new programs or updates to be installed, in that on starting a setup, the user will automatically be prompted by the Windows system to log on as an administrator, select the newly-created account and enter the familiar password. Finally click on *Next* and *Finish*.

In the list *Manage other accounts* click on the newly-created username and *Change the account type*. Select *Administrator* and confirm this by clicking *Change Account Type*.

3. **Downgrade other accounts:**

Call *User Accounts - Manage another account* on the *Windows Control Panel*. A list of all active accounts will be displayed, among these the *Administrator* and the newly-created second administrator. Click on **all other accounts** one after another and select *Change the account type*. Select *Standard user* and confirm this by clicking *Change Account Type*.

4. **Create a new account only for backup purposes:**

To perform the backups, a new standard user account with password must be created (e.g. using the name *BackupUser*). Call *User Accounts - Manage another account* on the *Windows Control Panel*. Click on *Add a new user in PC settings* and *Add Account*. Create a new **local account** as described in 2. above. The account type remains a *Standard user*. This account will never be used for normal logons: it is only required by the program **PbStarter** to perform the backups.

It is also recommended to add this user to the local *Backup Operators* group (not available in *Windows 10 Home*). Strike *Windows key + R*

in combination to open the *Execute* dialog and insert *lusrmgr.msc*. After clicking the *OK* button, the *Local Users and Groups* management console will open. Select *Users*, double-click the new user, switch to the *Member Of* tab and add the group *Backup Operators*.

Security settings for the directories

As described above, write access to the backup directory must be blocked for all standard users except the special backup user. In addition, it must be ensured that the backup user has read permissions to all directories to be backed up.

Important note: The drive containing the backup directory must be formatted in **NTFS** (Windows default). The FAT32 file system often used on USB sticks does not support security settings.

To understand the procedure, it is important to know that permissions of a parent directory are automatically passed to all its child objects (files and subdirectories). Assuming that a new directory is created on drive *F:*, e.g. *F:\Backup*, it will inherit all permissions from its parent directory *F:*. You can check this yourself by right-clicking on the new directory and selecting *Properties* and the *Security* tab. In the upper part of the dialog window, all users and groups having permissions on this directory are displayed and, in the lower part, the permissions assigned to the selected user or group can be seen (*grayed out* because inherited). A group contains several users to simplify the assignment of permissions. The permission displayed refers to all users in the group.

1. **Security settings for the backup directory:**

All normal users should only have permission to read from this directory. Only the backup user (see *BackupUser* above) is to have permission to write. In the following description, it is assumed that the backup is to be made to a new directory *Backup* on drive *F:*:

- Log on as administrator (see above).

- Create a new directory *Backup* on drive *F:*.
- Right click on this directory and select *Properties - Security* to open the dialog to change the permissions of this directory.
- Initially, permission inheritance in this directory must be turned off. Click on *Advanced* and *Change Permissions*.
 - **Windows 7:** Deselect *Include inheritable permissions from this object's parent* and select *Add* in the prompt that follows, then click *OK*
 - **Windows 8 and 10:** Click *Block Inheritance* and in the prompt that follows, click *Convert inherited permissions into explicit permissions on this object*, then click *OK*
- Click *Edit* on the *Security* page
- Retain the settings for **SYSTEM** and **Administrators**
- Click on the group **Users**, if this group does not exist click *Add...* to create a new such entry. Permissions are to be restricted to **Read & execute** and **List folder contents**. There must be **no permissions** to *Full control*, *Modify* or *Write*.
- Click on *Authenticated users* (if existing) and *Remove*
- If there are further user accounts listed, they must also be removed
- Click *Add*, insert the name of the newly-created backup user *BackupUser* and click *OK*
- Check *Modify* in the list of *Permissions for Users* and click *OK* twice

2. Security settings for the directories to be backed up:

The backup user *BackupUser* must have permission to read from all directories to be backed up. If the archive bit is to be reset during backup (*Full (new)* and *Incremental*), this user additionally needs permission to change file attributes. This is not required for backups using either of the modes *Update* or *Differential*. If all personal data of the users are located in the Windows default directories, only the directory *C:\Users* (and its sub-folders) must be set up as described below. If directories at other locations are to be backed up, an analogous procedure is required.

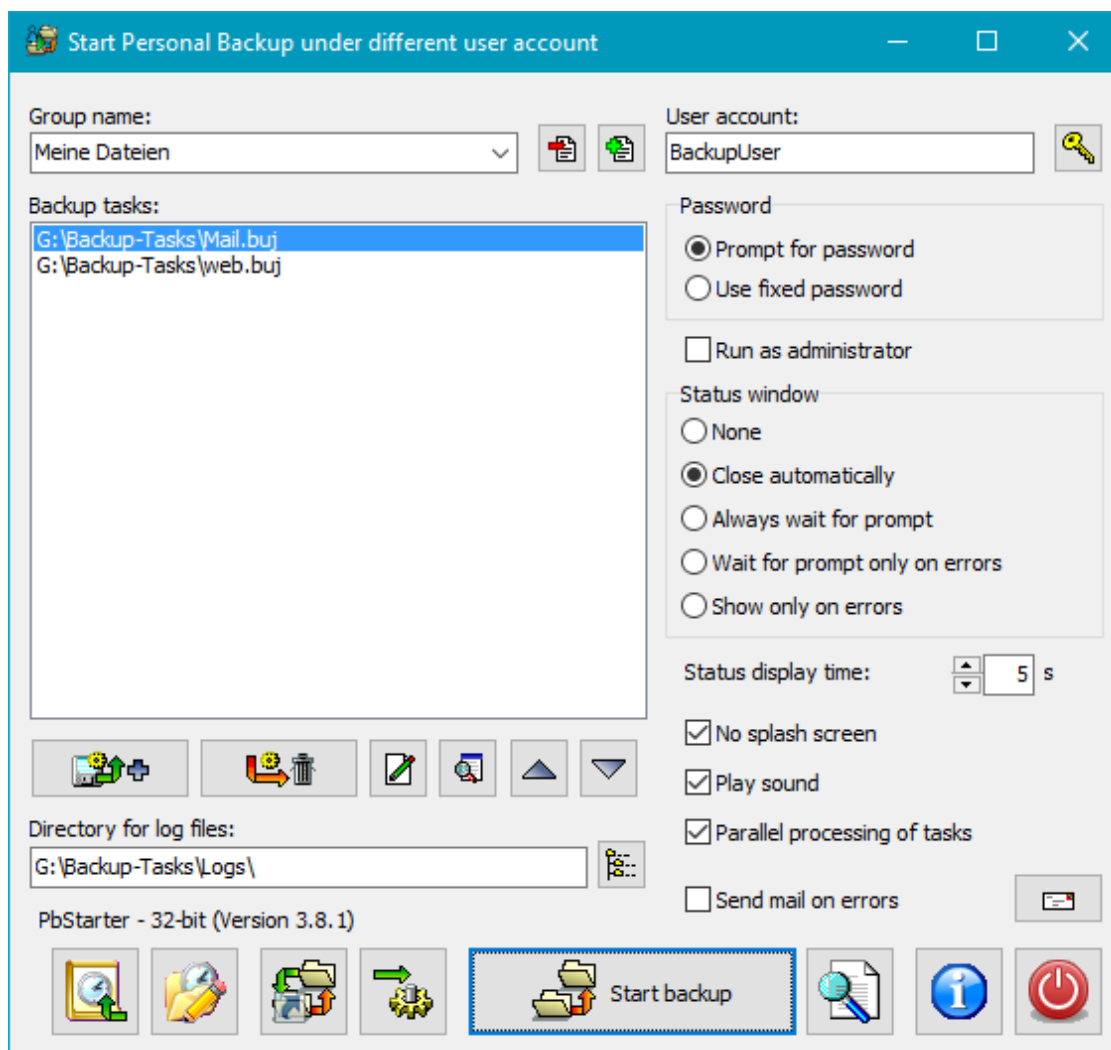
- If not already done, logon as administrator (see above).
- Right click on the directory *C:\Users* (or other directory as appropriate) and select *Properties - Security*
- Click the *Edit* button.
- Click *Add*, insert the name of the newly-created backup user *BackupUser* and confirm by clicking *OK*.
- Check the *permissions* list of the backup user to make sure that **Read & execute** and **List folder contents** are selected and confirm by clicking *OK* twice. Due to inheritance, the system will start to adjust the security settings of all child objects. Depending on the number of files, this can last a little while.
- If the archive bit must be reset in the source (as in *Full (new)* and *Incremental* modes) the backup user additionally needs permission to change file attributes. For this purpose, click on *Advanced* in the *Security* tab and then *Change Permissions*.
- Select the backup user and click on *Edit*.
- Then select the permission *Write attributes* and confirm by clicking *OK* three times.

The utility program PbStarter

Overview

Using this program, several backup tasks previously configured with **Personal Backup** can be arranged as a group. Apart from this, each group contains the credentials

of the user account under which the backups are to be performed (e.g. the *BackupUser* mentioned above). Clicking the button *Start backup*, all backup tasks in the selected group will be performed using the account of



the specified user. The tasks are processed in the order as specified by the list or optionally in parallel. In addition, you can select how the status window will be displayed during backups and if the program should prompt for the password on each start of a backup or save it permanently as an encrypted string. Optionally, you can specify that the backups will be **run as an administrator**. In this case the **Windows User Access Control** will prompt for an elevation of user privileges (e.g. to use **Volume Shadow Copies**).

User interface

After starting the program for the first time, all fields (see screenshot on the right) are initially empty. At first enter a unique name for the group to be created in the *description* field. At the top right insert the name of the user account under which the backups are to be performed. By clicking the button to the right, the associated password can be entered to be permanently saved as an encrypted string. If no fixed password is specified, it must be entered on each start of the backups by the user. Optionally, you can specify to run the backups with elevated right as administrator. This is, for example, required if **Volume Shadow Copies (VSS)** are used for the backup. Then select the backup tasks (*buj* files) for this group by clicking the button on the left beneath the list field. Notice the **important notes** below.

Short description of the buttons:



Creating a new group

As described above, a new group will be created.



Delete selected group

The selected group and all its settings will be deleted.



Add backup tasks

A dialog opens to select one or several tasks (*buj* files) and add them to list.



Remove a backup task

The selected backup task will be removed from the list..



Edit the selected backup task

Personal Backup will be started under the account of the specified backup user to edit the settings of the selected backup task.



Show the log file of the selected backup task

If a separate directory for the log files was specified (see input box below), the log file of the selected task will be displayed immediately after clicking this button.



Change the order of the backup tasks

By clicking one of these buttons, the selected task will be moved up or down in the list.

Other options

- **Status window:** You can adjust how the status window of the backup progress is to be displayed. If *Close after delay* or *Wait for prompt only on errors* is selected, you can in addition adjust the display time.
- **Behavior of Personal Backup:** The checkboxes below let you select whether the Personal Backup splash screen shall be displayed on program start and whether the end of a backup shall be signaled to the user by playing a sound or not.
- **Parallel processing of tasks:** You can select whether the tasks of the group shall be processed sequentially or in parallel (for example useful in multi-core processor systems).
- **Log directory:** If a directory name is specified, during backup all log files will be saved at this location. Consider that the backup user needs right permissions to this directory. If nothing is specified, the log files will be written to the default log directory of the backup user (e.g. `C:\users\BackupUser\AppData\Roaming\PersBackup6\`).

On the right,

In the field to the bottom left,

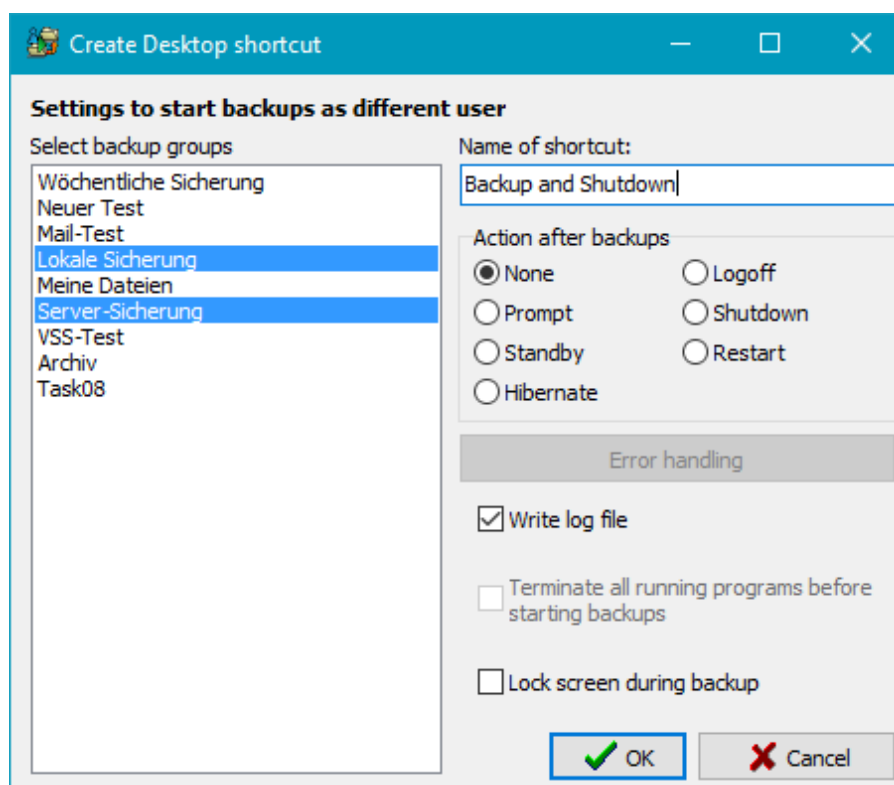
The group properties will be saved automatically on closing the program or starting a backup. By clicking the small arrow to the right of the description field you can switch between different groups.

Create a Desktop shortcut



Clicking the third button from the left at the bottom will open a dialog (shown

on the right) for creating a Desktop shortcut to start selected backup groups with one double click under the associated user accounts. You can combine this with a subsequent action (e.g. *Shutdown*). In this way it is very easy to run a secure backup before shutting down the computer. No longer use the Windows function *Start menu - Shutdown*: instead double-click this Desktop icon!

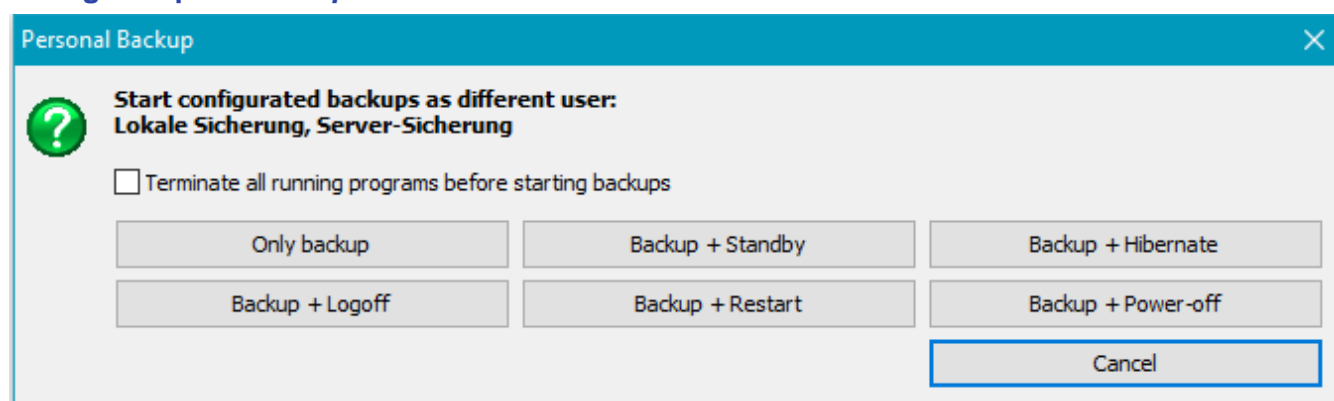


The required settings can be made in a dialog (see screenshot). The list on the left shows all configured backup groups. Select the groups to be run from the Desktop shortcut by click and *Ctrl*-click. On the right you can select the action to be performed after the backups have finished ([see more](#)). If *Prompt* is selected, the backups will not start immediately after clicking the Desktop shortcut but rather the user will be prompted beforehand to select the subsequent action. In this way, it is very easy to start a secure backup under a different account and decide in each case what should happen afterwards (e.g. hibernate, poweroff or even continue).

Optionally, you can specify that all running programs of the logged-on user should be terminated prior to the backup

and that a log file should be written. After clicking *OK*, the desktop shortcut will be created.

Dialog for option *Prompt*



Start backups using the Windows Task Scheduler



Create a new task: Clicking this button, will add several selected backup groups to the Windows Task Scheduler to be started automatically for a time schedule. The group selection and other settings are done similar to the Desktop shortcut (see above). Next, you insert the name for the task and the time schedule.

(see here).



Edit a task: Clicking this button will show a list of all tasks using **PbPlaner**. Select a task and click the button *Edit task* to modify the associated time schedule.

Show PbStarter log



If PbStarter was started using the Windows Task Scheduler or a desktop shortcut (see above), an own log file will be created. It will record start and end times, all executed backup groups with their backup tasks and whether errors occurred (e.g. if a running program could not be terminated or Personal Backup could not be started). Clicking this button will display the log. If there happened errors during backup, detailed information can be retrieved from the log of the particular task (see above).

Start an application under different user account



As described above, the logged-on user cannot write or make changes to the backup directory. By clicking this button, a selectable file manager, e.g. **TotalCommander** or **FreeCommander**, and additionally any other application, e.g. a text editor such as **PsPad** will be started under the displayed user account. Using the application(s) started in this way the user will be able to make required changes in the backup directory. **Note:** Windows Explorer cannot be started in this way.

Command line options

[group list] /force

Starts a backup of all task collections specified in group list (see above under *description*). The group names must be separated by a spaces. If a group name contains spaces, it must be enclosed by quotation marks.

/ini:[filename] or /ini:[directory]

All program settings are stored in a file **PbStarter.ini**, which is located by default in the Application Data folder of the user. Using this option you can select an alternative name and/or directory. If a full path is specified (e.g. `/ini:E:\MyBackupConfiguration\`), it will also be used for the PbStarter log file and the Personal Backup settings. In this way you can accomplish that no traces are left behind for example after starting the program from an USB stick.

Important notes



All **Backup tasks** to be executed must be located in a directory to which the backup user can write. For this, it is recommended that a new subdirectory (e.g. `F:\Backup\Tasks`) be created in the backup directory (see above: `F:\Backup`) and all required *buj* files be copied there. The same applies to **log files**. To access these files easily, it is useful to create another subdirectory `F:\Backup\Logs` and enter this name in the group

configuration (see above).

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Personal Backup Version 6

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Backup and Restore of Thunderbird mail data

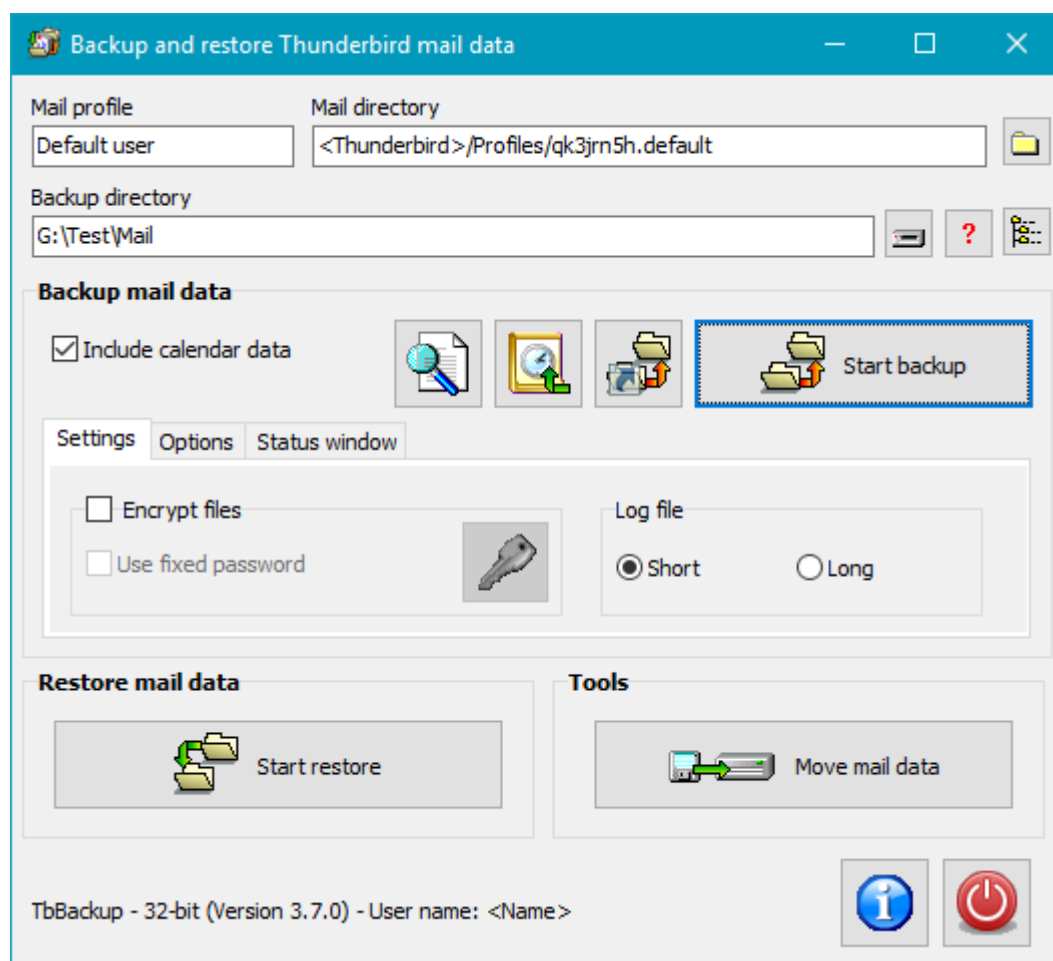


This program will help the less experienced **Thunderbird** user to backup and restore his/her mail data. It is part of the **Personal Backup** program package. Because the location of the mail data is a rather confusing and by default not visible to the user, problems can occasionally arise. In particular, a restore of mail data frequently fails.

Using the **TbBackup** program provided, backing up and restoring of Thunderbird user data becomes child's play. After selecting the directory to which the data is to be saved, just a single click is required. Further settings are unnecessary since these are taken care of by the program. All important files in the root directory of the user's profile will be backed up automatically. Among these are the Thunderbird preferences and the address books. Files created by Thunderbird automatically if missing, like sqlite databases, will not be backed up. The calendar data (events and tasks) are located in an own subdirectory and can be optionally included in backup (default setting: *selected*). Other Subdirectories containing Thunderbird's temporary files must not be backed up and are automatically excluded from backup. The actual backup or restore is performed in the background by **Personal Backup**.

If present, multiple Thunderbird profiles ([more information](#)), are supported. In such cases the desired profile must be selected prior to starting the backup.

Important note: The program can only be used if all mail data is located at the original location or was moved by the user manually in conjunction with an adjustment of the file *profiles.ini* ([see this description](#)). If you instead changed the paths of the mail folders in the account settings of **Thunderbird**, **TbBackup can not be used**. In this case the Backup must be performed using a manually created task in **Personal Backup**. The same applies to a Restore.



Overview

The following functions are provided (see above screenshot):

- **Selection of a user profile** if using multiple profiles in Thunderbird
- **Selection of the destination directory** for the data backup
- **Backup mail data** by clicking the *Start backup* button
 - Optional backup for calendar data
 - Further functions: create a desktop shortcut, create a command line for use in Windows Task Scheduler and display the backup log
 - Settings: optional encryption of the data to be backed up and selection of log mode
 - Additional options: synchronization and mail delivery
- **Restore mail data** by clicking the *Start restore* button
- **Tools:** Move mail data to a different location

Basic settings

After starting the program for the first time, the user will be prompted to perform the basic settings:

- Select the destination directory for the backup (using a directory on an external drive is recommended)
- If Thunderbird is being used with multiple profiles, the user must select the profile to be backed up, whereas a single profile (the most common case) will be found and selected automatically.

Edit settings

Mail profile



If Thunderbird is being used with multiple profiles, the desired profile can be selected by clicking this button. Otherwise the profile of the *default user* will always be used automatically.

Backup directory



The backup directory should preferably be located on an external drive. Click the button to select a directory.



Replace the drive letter by the volume name ([see here](#)).



Inserts placeholders e.g. for date and time into the destination directory ([see here](#)).

Backup mail data



By clicking this button, the backup will be started. For this purpose, a Personal Backup task with all required settings will be created and started automatically. A progress window will be displayed on the screen.

If the option *Include calendar data* is selected (default setting), all events and tasks from the Thunderbird calendar *Lightning* will be included in the backup.

Additional functions



Create a desktop shortcut: A new shortcut for starting the mail backup will be created on the desktop. Double-clicking this icon will immediately run the backup.



Automatic backup using the Windows Task Scheduler: Clicking this button will create a new task in the Windows Task Scheduler to backup your mail data. The task name will be generated automatically using the name of the mail profile for later identification. The other settings are similar to those for general backups ([see more](#)).

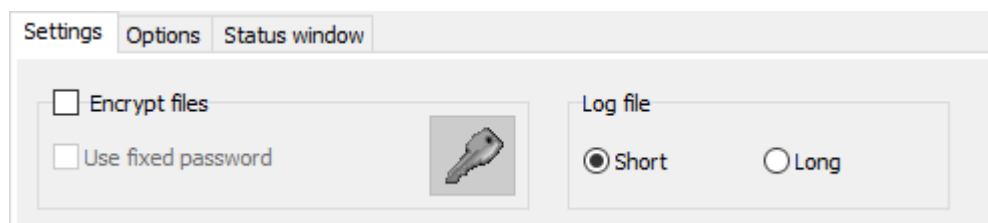
If the task has already been registered, clicking this button will either run the task immediately or will open a dialog to change the settings.

If the task has already been registered, clicking this button will either run the task immediately or will open a dialog to change the settings.



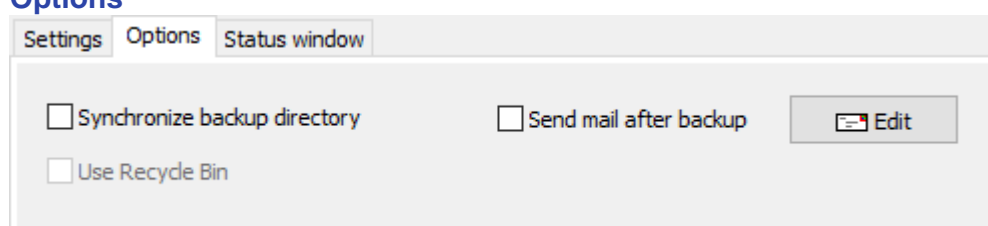
Show backup log file: Clicking this button will display the log of the last mail backup.

Settings



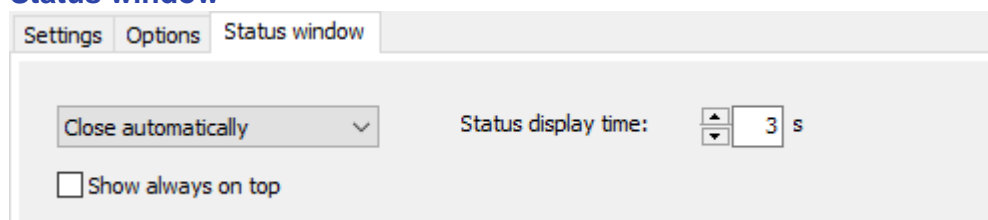
- **Encryption:** If the checkbox is marked, all files will be encrypted during backup using the AES method ([more information](#)). It is possible to specify a fixed password for the encryption. This will be stored as an encrypted string in the task file. For even higher security, you should not use this option but specify that the password must be entered manually for each backup.
- **Log file:** You can select whether you wish a short or a long log to be written during backup ([more information](#)).

Options



- **Synchronize backup directory:** all files that do not exist (or no longer exist) at the source will be deleted from the backup directory.
- **Use Recycle Bin:** During synchronization, files will not be irrecoverably deleted but moved to the Windows Recycle Bin so that you can recover them if needed. This option is only available if the destination is on a local fixed drive.
- **Send mail after backup:** If you wish, you can send a backup report by mail to one or more recipients. Optionally the log file can be added as attachment. ([more information](#)).

Status window



You can adjust if and how the status (progress and result) during backup will be displayed. There are the same choices as for [automatic backups](#). If one of the options is selected that will close the status window automatically, additionally the waiting time can be set. Furthermore you can select whether the status window should be displayed always on top ([see here](#)).

Restore mail data



If your mail data was backed up using **TbBackup** as described above, a Restore is very easy, because all information required to restore the selected profile will have been stored together with the backup. The user will only be prompted for confirmation before Personal Backup is started to perform the Restore ([more information](#)).

Restore from another backup

If the mail data was backed up using a conventional Personal Backup task or by simply by copying the files, the information about the mail profile mentioned above will not be available. However, a Restore of the selected profile can still be performed but in this case the backup directory of the profile must be selected manually, whereupon the program will check that the selected directory is a valid backup of Thunderbird data.

Restore to another computer

If you want to move your mail data to a new computer, follow these steps:

1. **Backup:** First of all, run a **backup** on the old computer. The destination should be a subdirectory (such as *G:Mail-Backup*) on an external drive (e.g. connected via USB).
2. **Initialize Thunderbird:** On the new computer start Thunderbird once to create a new mail profile. Do not create any new accounts as these will be taken from the old computer in step 3. Close Thunderbird.
3. **Restore:** Connect the external drive to the new computer. Then run **TbBackup**, select the backup directory mentioned above and start the restore. Because until now there is only an empty mail profile, you can overwrite it without hesitation. All backed-up mail data will be copied to the new profile. After a new start of Thunderbird, all accounts and mails should be available as before.

Additional notes

Before starting a Restore, the user can choose to delete all current mail files (even those not backed up). This is useful when for example indexing issues are present in the mail directory. When Thunderbird is next started, all required files will automatically be rewritten.

Before starting a Restore, the program will check that the mail directory to be restored is assigned to the selected profile and actually exist. Usually the remedy for this is to install Thunderbird anew before trying Restore again. A running Thunderbird application must be closed prior to a Restore. If not already done, the user will be prompted to do this.

Move mail data



Using this function, it possible to move the mail data on the same computer to another location. To copy mail data to another computer, you must use a **Restore** as described above.

By default all Thunderbird mail data is located within the user's *Application Data*. This is an area of the file system that is usually not visible to the user in Windows Explorer. In my opinion, this choice is less than optimal and a directory within the user's *Documents* would be more appropriate. Users who share this view can move all the mail data assigned to the selected profile to another location by clicking this button. The Thunderbird settings will be adjusted automatically.

Important: before undertaking this action, backing up the mail data is strongly recommended.

Command line options

Having started the program via a desktop shortcut, a batch script or having invoked it from another program (e.g. Windows Task Scheduler), you can control it by using the following command line options (note: all options can be abbreviated but must be distinct: e.g. `/force = /f = /for`):

Overview

<code>/backupdir</code>	<code>/exclude</code>	<code>/force</code>	<code>/ini</code>	<code>/lang</code>
<code>/log</code>	<code>/logdir</code>	<code>/prompt</code>	<code>/taskdir</code>	<code>/wait</code>

Description

[Profile]

The program window will be opened for the specified mail profile [**Profile**].

/force

The backup of the specified mail profile (see above) will start immediately. If no mail profile specified, the default mail profile from the Thunderbird settings will be retrieved (**see more**). The program window will not be opened. All global settings will be used as long as the command line options do not specify something else (see below).

/exclude:[Directories]

In addition to the **subdirectories excluded by default**, this option specifies other subdirectories to be excluded from the backup. You can use the **syntax** known from file filters. Multiple filters must be separated by commas

/taskdir:[Directory]

Directory specifies a special path to the task files. This replaces the default path in *My Documents*. When

starting the program from a USB stick, for example, you should use this option together with **/ini:..** to save the task files by default on the stick. The filename may contain a **placeholder**.

Example: `TbBackup.exe /i:%progpath%\tbl-1.ini /t:%progpath%`

Important: The user needs **write permission** for this directory.

/backupdir:[Directory]

If **Directory** is a full path (e.g. `G:\Backup`), it will be used instead of the destination path defined in the task. If it is a relative path (e.g. `Test\Diff`), an additional subdirectory will be created beneath the destination folder defined in the task, hence it is possible to configure backup schedules using Windows Task Scheduler. This option is used by the program add-on *PbPlaner*.

Important: The user needs **write permission** for this directory.

/logmode:[n]

This setting overrides the log file settings from the task. The value **[n]** specifies the log type (**more information**).

/logdir:[Directory]

Directory specifies a special directory for the backup logs. If full path is not specified, a new subdirectory **Directory** will be created relative to the **task directory** (default location for log files **see below**).

/prompt:[Option]

Defines how dialog and status windows are displayed during backup.

wait Wait for user prompt.

delay Close status window after a short delay (default).

error User prompt will be required on errors. Otherwise the window will be closed after a delay.

quiet Display no progress and status windows.

silent Display no progress window, status window only on errors.

/wait:[n]

If the option **/prompt:...** selects **delay** or **error**, this option will specify the time the status window is displayed after backup. By default, the time is defined in the **Personal Backup preferences**.

/ini:[Filename] oder **/ini:[Directory]**

The user configuration is saved in the file **TbBackup.ini**. This file is located by default in the Application Data directory of the user:

- **Vista, Windows 7,8 and 10:** `C:\Users\<Username>\AppData\Roaming\PersBackup6`
- **Windows XP:** `C:\Documents and Settings\<Username>\Application Data\PersBackup6`

Using this option you can select an alternative configuration file in the default directory (e.g. `/ini:tb.ini`) or at any other location. For this, a full path must be specified (e.g.

`E:\MyBackupConfiguration\TbBackup.ini`). If only a directory is given, the default name **TbBackup-1.ini** will be added automatically.

If not specified otherwise using the option **/logdir:..** (see above), the log files are located in the same directory (using the second example: `E:\MyBackupConfiguration\TbBackup-1.log`). **Filename** may contain a **placeholder**.

/lang:[xx]

Select the user language. The command line option overrides the setting from the Personal Backup control panel menu (**Language**).

xx = de	German	xx = it	Italian	xx = nl	Dutch	xx = ru	Russian
xx = en	English	xx = es	Spanish	xx = hu	Hungarian		

xx = French xx = Portuguese xx = Polish
fr pt pl

Important note: The filenames must be separated by a spaces. **If a filename or file path contains spaces, it must be enclosed by quotation marks** as for example `"/exclude:cache*,My mails"`.

Example:

To perform mail data backup on a server for each connected user, a batch file is provided on a server share (e.g. `\\server\mail-backup`). To do this, at first all program files of **Personal Backup** are copied to the directory `\\server\mail-backup\pb` (**as for portable version**). Then a batch file is created in `\\server\mail-backup` containing these lines:

```
set BuDir=\\server\mail-backup\%username%
\\server\mail-backup\pb\TbBackup.exe /force /taskdir:%BuDir% /logdir:%BuDir% /log:2
/backupdir:%BuDir%
```

Background information

Thunderbird settings

By default Thunderbird stores its mail data within the *User's Application Data*:

- **Vista, Windows 7, 8 and 10:** `C:\Users\<Username>\AppData\Roaming\Thunderbird\`
- **Windows XP:** `C:\Documents and Settings\<Username>\Application Data\Thunderbird\`

Usually this area is hidden to the user. To make it visible, change the Windows Explorer setting via *Tools Folder Options View Show hidden files and folders*. However, this is not necessary for backups made using **TbBackup**.

In the directory mentioned above you will find a *profiles.ini* file in which the assignments of the mail directories to the Thunderbird profiles are saved (**more information**). **TbBackup** will read the profile information from this file. If there are several profiles specified, the user must select the one whose data he wants to backup. A single profile (usually named *default*) will be used automatically.

TbBackup will create a file *bu-profiles.ini* in the destination directory that contains the required information for restores.

How TbBackup works

TbBackup uses **Personal Backup** for backup and restore. It will automatically create a backup task for each selected mail profile called *tb-<profilename>.buj* (e.g. *tb-default.buj*) with all required settings. The backup will always use the method **Backup into separate files** with **zip compression**. Note that only those files that contain user settings and actual mail data will be selected. There are many files created by Thunderbird only for administrative purposes or temporary that do not need be backed up. Thunderbird will recreate these files automatically if necessary.

You can open this task in Personal Backup to make additional settings and to start the backup directly from there. The same applies to a restore. In this case **TbBackup** will create a **restore task** called *tb-<profilename>.rsj* (e.g. *tb-default.rsj*) to be executed by Personal Backup.

J. Rathlev, 24222 Schwentimental, Germany, March 2020



Personal Backup Version 6

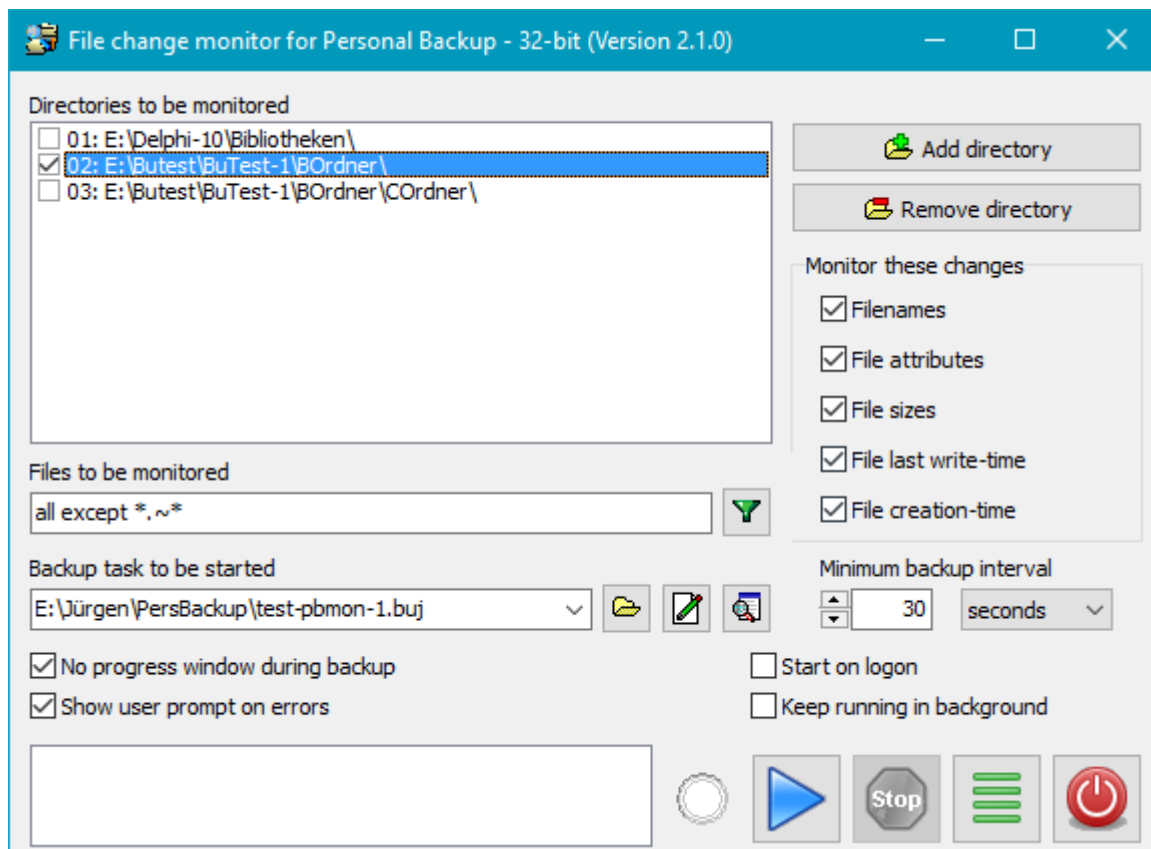
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Real-time backups with Personal Backup Monitor (*PbMon* - Version 2.1)



Sometimes you may wish to backup files modified during your daily work as immediately as possible and not wait until the next scheduled backup. For this, the directories containing the affected files must be permanently monitored to start the backup immediately



after a change is recognized. For this purpose, I have developed the program **Personal Backup File Monitor (*PbMon*)**. It is easy to use and is part of the install package of **Personal Backup 6**.

The program can monitor up to 32 user-defined directories. For each directory you can select which changes should be monitored (e.g. *filename* and/or *timestamp*). In addition you can specify a filter (e.g. **.odt* or **.txt*) to monitor only files matching the filter condition. Each directory to be monitored can be associated with a special backup task which should be created beforehand with **Personal Backup**. The program will check periodically at adjustable time intervals, e.g. every 30 seconds or 5 minutes, whether there have been changes in one of the selected directories and will then start the associated backup task automatically in the background.

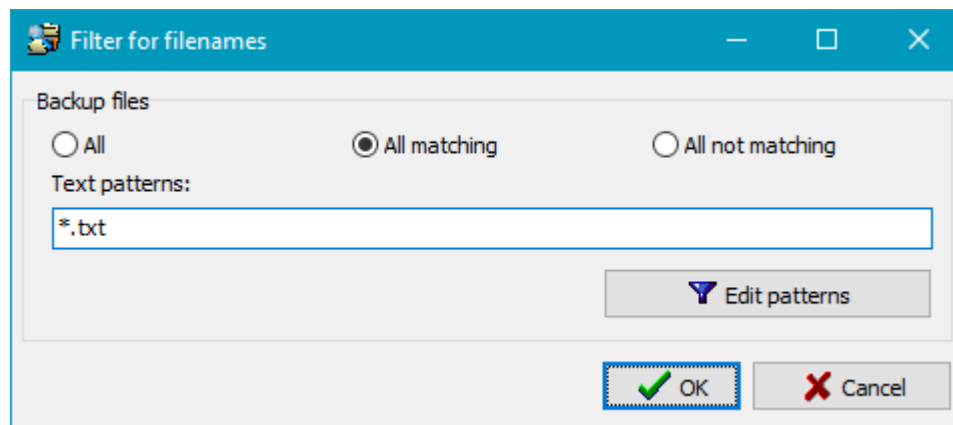
Note: The Windows function *ReadDirectoryChangesW* used for monitoring unfortunately has limitations. Although it is possible to monitor also subdirectories, in contrast to the root directory there is no feedback as to which files have been changed, so that the filtering described above does not work. Therefore the monitoring of the program is limited to each specified root directory unless individual subdirectories to be monitored are specifically added to the list.


Settings

By clicking the button *Add directory* you can add any directory to the list of directories to be monitored (top left in the figure). By clicking *Remove directory* an entry can be deleted from the list. After selecting one of the listed directories, you can configure the associated monitoring options:

- **Monitor these changes:** *Filenames* and *File last write-time* are preselected. As a result, a data backup will

start automatically each time a filename is created or changed or a file timestamp has changed. In addition, you can choose to start the backup when *file attributes*, *file sizes* and/or *file creation-time* have been changed.



- Files to be monitored:** By specifying a filter you can select which files should be monitored. Clicking the button  will open a filter dialog (below right) for editing the filter conditions. The syntax of the text patterns is [described here](#).
- Backup task to be started:** Select the task created beforehand with **Personal Backup** for backing up the selected directory. It is **strongly recommended** you backup only the associated directory. This will ensure that the automatically-triggered backup will finish quickly. A backup task designed to backup larger volumes once a day is not suitable for this purpose.

Buttons: Using the buttons at the right of the text box, you can select the task in a dialog and edit it. Clicking the most right button will display the associated backup log.
- Minimum backup interval:** The shortest time interval between two backups can be set between 5 s and 360 min. At the end of this interval, the program checks whether there were changes in one or more selected directories. If so, the backups associated with the affected directories will be started.

More options

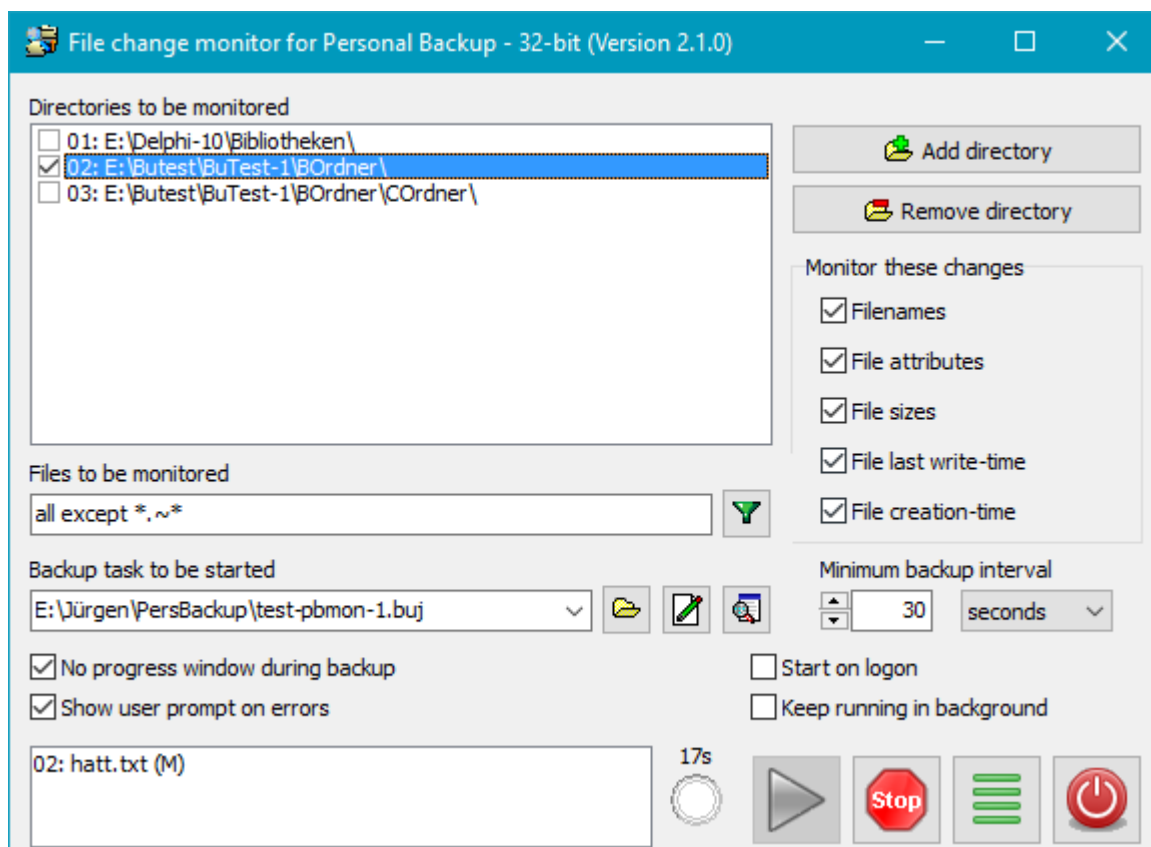
- No progress window during backup:** The backup runs completely in the background. No **status window** will be displayed afterwards.
- Show user prompt on errors:** If errors occurred during backup, for example a not connected external drive, the user will be prompted.
- Start on logon:** The program will be started automatically on logon
- Keep running in background:** After start of monitoring, the program window will be closed. The program continues running in background. A small icon is displayed in the Windows notification area. By clicking this icon, the program window will be reopened.

Menu

Click on the *Hamburger button* at the lower right to open the menu:

- Run Personal Backup** - Start Personal Backup to edit a backup task (F9)
- Reset window to default size** - The size of the dialog window will be reset to its predefined size.
- Help** - Show program help (F1)
- Version info** - Show the current version of the program

Start and stop



monitoring

After configuring the above settings, you can start monitoring by clicking the button with the blue arrow. All directories in the list having a check mark will be monitored until the *stop* button is clicked to cancel this.

If a change to a selected file in one of the selected directories has been recognized, the filename will be listed at the bottom left. The leading number (*01*, *02*, etc.) points to the entry in the directory list. A bracketed suffix behind the filename indicates the type of the change: *A* = new, *R* = deleted, *M* = changed, *O* = old name or *N* = new name. The time remaining until the next scheduled backup is displayed to the right and the indicator below will blink when the backup starts.

Note: Changes to the settings will apply only after stopping and restarting monitoring.



Tips and tricks



Overview

- [General recommendations](#)
- [Alternate method for backup on logoff/shutdown](#)
- [Protecting the backup from malware \(Ransomware\)](#)
- [Starting a backup automatically on connecting an external drive](#)
- [Daily alternating backup on two external drives](#)
- [Automatically alternating backup on several external drives](#)
- [Configuring individual alternating schedules](#)
- [Version-5.6 backups using Volume Shadow Copies \(VSS\)](#)

General recommendations

To increase the **integrity of your personal data**, it is strongly recommended to move the folders provided by the Windows system, for example *Documents*, *Music* and *Pictures*, from their original location on the system drive C: to a **different partition** on a separate drive. A possible hardware configuration could consist of an SSD drive for the system and installed applications (a size of 256 or 512 GB would be sufficient) and an additional conventional hard drive (with a size of 1 or 2 TB) for your personal data. By this means, your data will be widely protected from system crashes. If the system fails for any reason, for example after an update, it is very easy to recover the system partition from a **disk image**. The data partition will be unaffected by this and will be available instantly. This will be the case even if the system must be installed completely anew. An additional backup of your data using **Personal Backup**, for example on an external drive, is in any case recommended. Find more information about [how to move your personal data](#).

Alternate method for backup on logoff/shutdown

After updating to Windows 10 (1903), an issue has arisen affecting a backup to be performed **automatically** on logoff or shutdown. The backup starts, but among other things the progress window is not visible because the system enables the lock screen ([more details](#)).

Because of this, an alternate method is described below. You must create an appropriate Desktop shortcut (see below) which will be used to logoff or shutdown the computer instead of the *On/off* function from the Windows Start Menu. Double-clicking this shortcut will first perform the provided backups and then, depending on your selection, logoff or shutdown the system.

Procedure

● Preparation

All backups to be performed in this way require the option *By request* in the dialog for **Time-controlled automatic backups**. Backups already set up as to be started *on logoff*, should also be changed to this option.

● Desktop shortcut

Then, open the dialog **Create a shortcut on the desktop** from the **Control panel** and define the *Action after backup*, for example *Shutdown*. To select the tasks to be performed, click the small button at the upper right of the **shortcut dialog** and select *All "By request"* from the list. The status window should be set to *Close automatically*. Finally, you should assign an appropriate shortcut name such as *Backup and shutdown* and click the *OK* button to create the Desktop shortcut.

Protecting the backup from malware (Ransomware)

Of late, ever more news items are published reporting malware (so-called Ransomware) that maliciously encrypts a user's data and demands a ransom in return for the decryption key. Unfortunately a simple backup is not capable of preventing such attacks because it too can be maliciously encrypted and hence cannot be used to restore the

data.

As reported, the currently-rampant malware program Locky does not encrypt all file types but unfortunately the information about this varies. It seems that gze files used by Personal Backup by default for encrypted backups are not affected and so should not be corrupted, but it is uncertain whether this will remain the case in the future. The list of file types not affected can change at any time. You should not rely on any current immunity and instead, take other actions.

The best way to protect your data from such malware is to preclude any access to the backup files, e.g. by backing up to an external drive that is not permanently connected to the computer. In this case the user has to connect the drive every time before making a backup. This can be very inconvenient but the method should always be used when performing a "backup of a backup". This is not required every day, but should be done periodically. If you want to protect your backups also from other risks (fire, burglary, etc.), you should deposit the backup medium in a safe place.

There are other safe ways for carrying out daily backups that can be used for internal and permanently-connected external drives. An essential requirement is to format these drives in NTFS (Windows default). In this case access can be adjusted by setting suitable user permissions: the currently logged-on user should have permission only to read the backup directory, so that no program started by this user can write into this directory. To perform a backup you can then use one of the following methods:

- Start the backup using another user account which has the required write permissions (see below under 1. and 2.) or
- Temporarily increase user write permissions (see below under 3.).

Important prerequisite: The **logged-on user must not have administrator rights**. Unfortunately this is not established by default during Windows installation, hence the settings for the relevant users accounts must be changed manually. The following configuration is recommended:

1. Activate the *default administrator* account and assign a password
2. Add another *administrator account* using the user's password for additional security and program installation.
3. Downgrade all other accounts to *standard user*.

For all **normal activities** on your computer (mail, internet, text processing, image processing, etc.) **administrator rights are not required**. If a program is to be installed, the Windows user access control will pop up automatically and prompt for a temporary logon as administrator (see above under 2.).

Important preliminary note: The following descriptions were compiled carefully, but the author assumes **no responsibility for the topicality, correctness, completeness or quality** of the information provided. Every user should be aware of the **risks** involved in **changing system settings**. **Liability claims** against the author whether material or non-material caused by the use of the information provided shall be **rejected**.

It is assumed for the following description that the backup is to be made to a directory on drive *F*; e.g. *F:\Backup*. If desired, you can replace the drive letter with any other applicable to your system. To understand the procedure, it is important to know that permissions of a parent directory are automatically passed to all its child objects (files and subdirectories). In our example the directory *F:\Backup* will inherit permissions from its parent directory *F:*. Because permissions for *F:\Backup* and its subdirectories are to be amended, inheritance of this directory must first of all be turned off. How this can be done is described below in detail.

There are several ways to perform a protected backup on a local drive:

1. Automatic backups using Windows Task Scheduler

The user logs on with an **administrator account** (see above) and creates for example the backup directory *F:\Backup*. Then, a new *standard user* account only for performing the backups is created (*Control Panel – User Accounts*), with for example the account name *BackupUser*. This user needs **read access to all data to be backed-up** and **write access to the backup directory**.

Change **permissions of directories to be backed-up**:

- Right click on a directory to be backed-up and select *Properties – Security*
- Click *Edit...*
- Click *Add...*, insert the name of the newly-created backup user *BackupUser* and click *OK* twice

Change **permissions of the destination directory**:

- Right click on the destination directory *F:\Backup* and select *Properties – Security*
-

Click on *Advanced* and *Change Permissions*

- **Windows 7:** Deselect *Include inheritable permissions from this object's parent* and select *Add* in the following prompt, then click *OK*
- **Windows 8 and 10:** Click *Block Inheritance* and in the following prompt *Convert inherited permissions into explicit permissions on this object*, then click *OK*
- Click *Edit...* on the *Security* page
- Retain the settings for *SYSTEM* and *Administrators*
- Click on the group *Users*, if this group does not exist click *Add...* to create a new entry. Permissions are to be restricted to *Read & execute* and *List folder contents*. There must be **no permissions** to *Full control*, *Modify* and *Write*.
- Click on *Authenticated users* (if existing) and *Remove*
- If there are more user accounts listed, they must also be removed
- Click *Add...*, insert the name of the newly-created backup user *BackupUser* and click *OK*
- Check *Modify* in the list of *Permissions for Users* and click *OK* twice

The backup must then be configured for the destination directory in the normal way. Take care that the task is saved into a directory where the backup user has write permissions. After this, the backup task is to be added to the list of Windows Scheduled Tasks ([see here](#)). Insert the name and the password of the newly-created user *BackupUser* under *User account*

2. Starting the backup manually by using another user account

Personal Backup since version 5.8 contains the additional program **PbStarter** which can be used to configure backups started under a different user account in a very comfortable way ([detailed description](#)). Another way is to use the Windows command *RunAs*. As described above, at first create a new user account only for backup and then change permissions for the destination directory. On configuring the backup task, take care that it is saved into a directory where the backup user has write permissions.

Then open the *Windows Command prompt* window or type the *Windows-R* key and insert the following line: **Windows 32-bit with Personal Backup 32-bit** or **Windows 64-bit with Personal Backup 64-bit**:

```
runas /user:Backup "%ProgramFiles%\Personal Backup 5\PersBackup.exe /i:pb
<task>"
```

Windows 64-bit with Personal Backup 32-bit:

```
runas /user:Backup "%ProgramFiles(x86)%\Personal Backup 5\PersBackup.exe
/i:pb <task>"
```

Replace *<task>* by the full path of the backup task to be executed. After inserting the password for the user (in this case *BackupUser*), **Personal Backup** will be started under this account and the specified backup task will be opened. To start the backup, click the *Start* button.

For simplification you can insert the above line into a batch file to start the backup. By adding the command line option */force*, the backup will be started immediately without opening the desktop.

Important note: This procedure cannot be used for automatic backups.

3. Starting the backup manually or via a desktop shortcut using changed permissions

In this case the backup will be performed using the account of the logged-on user. For reasons mentioned above, this user must have only *read permissions* on the destination directory. These permissions are to be raised temporarily only for the time the backup is running so that the user may write to that directory. The following issue could be problematic: due to inheritance (see above) before and after the backup, all permissions of the files in the backup directory must be changed and, if there are many files, this will need some time. The following procedure is similar to that described in 1.

The user remains logged on under his normal account and creates the backup directory to be used *F:\Backup* after which, permissions of the destination directory are adjusted:

- Right click on the destination directory *F:\Backup* and select *Properties – Security*
- Click on *Advanced* and *Change Permissions*
- **Windows 7:** Deselect *Include inheritable permissions from this object's parent* and select *Add* in the following prompt, then click *OK*
- **Windows 8 and 10:** Click *Block Inheritance* and in the following prompt *Convert inherited permissions into explicit permissions on this object*, then click *OK*

- Click *Edit...* on the *Security* page
- Retain the settings for *SYSTEM* and *Administrators*
- Click on the group *Users*, if this group does not exist click *Add...* to create a new entry. Permissions are to be restricted to *Read & execute* and *List folder contents*. There must be **no permissions** to *Full control*, *Modify* and *Write*.
- Click on *Authenticated users* (if existing) and *Remove*
- If there are more user accounts listed, they must also be removed
- Click *Add...*, insert the name of the logged-on user and click *OK*
- Uncheck *Full control* and *Modify* in the list of *Permissions for Users* and click *OK* twice

The backup must then be configured for the destination directory in the normal way. For the adjustment of permissions before and after the backup, the **External programs option** must be used. Insert the following command lines:

Before backup:

```
%sysdir%\icacls.exe %dest% /grant:r %username%:(OI)(CI)M
```

After backup:

```
%sysdir%\icacls.exe %dest% /grant:r %username%:(OI)(CI)RX
```

After saving the backup task it can be started either manually or by creating a desktop shortcut.

Important note: This procedure cannot be used for an automatic backup at logoff or shutdown because in this case the execution of external programs is disabled by the Windows system. Instead of using the *Windows start button* to shut the computer down, you can use a **desktop shortcut** to **Personal Backup** to do so. On creating this shortcut, select *Power off* as Action after backup. In contrast, a time-scheduled backup or a backup after logon is possible.

Starting a backup automatically on connecting an external drive

To start a backup automatically when an external drive is connected to the computer via USB, the program **AutoRunner** is required. After downloading the setup file, the program must be installed as described on the **AutoRunner website**.

To start a backup using this program, follow these steps:

1. After connecting the external drive, first the backup must be configured and stored as a task file (e.g. *usb-1.buj*). It would then be advisable to start the backup once manually to prove that everything functions as expected.
2. After this, a small batch file must be created using any text editor (e.g. *Notepad*). The file contains depending on the installation only one line:

Personal Backup 32-bit version:

Windows XP:

```
"%ProgramFiles%\Personal Backup 5\PersBackup.exe" <path>\usb-1.buj /force /hide /quiet
```

Windows 7/8/10 (32-bit):

```
"%ProgramFiles%\Personal Backup 5\PersBackup.exe" <path>\usb-1.buj /force /hide /quiet
```

Windows 7/8/10 (64-bit):

```
"%ProgramFiles(x86)%\Personal Backup 5\PersBackup.exe" <path>\usb-1.buj /force /hide /quiet
```

Personal Backup 64-bit version:

Windows 7/8/10 (64-bit):

```
"%ProgramW6432%\Personal Backup 5\PersBackup.exe" <path>\usb-1.buj /force /hide /quiet
```

<path> should be replaced by the path of the *buj* file. Save this batch file in the root directory of the external drive (e.g. *StartPb.bat*).

3. Then start the *AutoRunner* program and add a new start object selecting the batch file just created for this.
 - Trigger (File): *?:\StartPb.bat*
 - Command: *c:\Windows\System32\cmd.exe*
 - Parameter: */c ?:\StartPb.bat*

4. Remove the external drive.

Now whenever the external drive is reconnected, the batch file and consequently the backup will be started automatically.

Note: If you have any **problems** on executing this procedure, for example if you specified an invalid path, you should replace the option `/c` in *Parameter* by `/k` for debugging. This will cause the command prompt window not to be closed so that error messages remain visible.

Download

AutoRunner

Daily alternating backup on two external drives

To prevent a backup from attacks by malware (e.g. so called **Ransomware**), it is usually recommended to use an external drive only connected to the computer to perform the backup. Using two external drives alternately will cause an additional protection.

Using **Personal Backup** this can be realized as described in the following example:

1. Two external drives are provided with the volume names *Bu-1* and *Bu-2*. Right-clicking on a drive in for example *Windows Explorer* and selecting *Properties* will allow you to edit these names.
2. Create a **Backup task** containing all directories to be backed up using the *Update* mode. Specify a **volume name** containing a **placeholder** for alternating days: `:Bu-%d#2%:\Backup`.
3. Save the task and create a **Desktop Shortcut**.
4. The backup can be started anytime by double clicking the Desktop Shortcut. If the required external drive is not connected, the user will be automatically prompted to do so.

On odd-numbered days (1,3,5,.. counting from January 1) the backup will be stored on *Bu-1*, on even-numbered days on *Bu-2*.

Automatically alternating backup on several external drives

The procedure will be explained below using two examples. It is assumed that two external drives are permanently connected to the computer and provided with the volume names *Bu-1* and *Bu-2*. Right-clicking on a drive in for example *Windows Explorer* and selecting *Properties* will allow you to edit these names.

Daily change

1. Create a **Backup task** containing all directories to be backed up using the *Update* mode. Specify a **volume name** containing a **placeholder** for alternating days: `:Bu-%d#2%:\Backup`.
2. Save and then add the task to the list of **automatic tasks**. Select an appropriate time (e.g. *On logoff*) for execution.

On odd-numbered days (1,3,5,.. counting from January 1) the backup will be stored on *Bu-1*, on even-numbered days on *Bu-2*.

Weekly change with schedule

1. Create a **Backup task** containing all directories to be backed up using *Update* or *Full* mode. Specify a **volume name** containing a **placeholder** for alternating weeks: `:Bu-%w#2%:\Backup`.
2. Save and then add the task to the list of **automatic tasks**. Select an appropriate time (e.g. *Daily at 20:00*) for execution.
3. Adjust a **schedule** for this automatic task using a cycle of 7 days (*1 x As defined in Task + Differential or Incremental*) with Monday for the full backup.

In odd-numbered weeks (1,3,5,..) the backup will be stored on *Bu-1*: with a full backup on Monday and a differential or incremental backup (depending on selection) on the other days. In even-numbered weeks the backup will be appropriately stored on *Bu-2*.

Configuring individual alternating schedules

The program supports saving data in accordance with a daily **alternating schedule**, i.e. one full and several differential or incremental backups (for more information refer to **Wikipedia**). To do this, you can use either the **internal automatic backup** or the additional program **PbPlaner** together with Windows Task Scheduler.

In addition, it is possible to use **placeholders for the destination directory** and **Windows Task Scheduler** with

its manifold options for starting an application to realize almost any individual alternating schedule. How to do so, is explained below using two examples.

1. Example for an alternating schedule with several backups per day

On every day of the week, a full backup shall be performed at 08:00 with differential backups at 11:00, 14:00 and 17:00. No backups shall be overwritten until the following week. The destination is a hard disk with the volume name *Backup*.

1. Create a task for a **full backup** with the following settings:

Destination: *:Backup:\Bu-%dow%\Full*

Directories to backed up: Select as required

Settings for backup destination: *Single files* and *Separate directories for drives* (recommended)

Compress files: *yes* (recommended)

Backup mode: Either *Full* or *Update (with the Archive bit options Use and Reset checked)*

In the case of *Full*, all files in the destination directory will be deleted and then all files copied from the source anew. This may take an appreciable length of time. In the case of *Update*, only new and changed files will be copied, which will take less time. On the other hand, all files deleted from the source directory will be retained in the target directory. To avoid this, it is recommended also to use **Synchronization**.

If you wish, you can in addition select other features, e.g. to encrypt files or send a mail notification. Finally the configured task will be saved as file using a suitable name (e.g. *Bu-Full*).

2. Configure a **differential backup** using the same settings as above with the following exceptions:

Destination: *:Backup:\Bu-%dow%\D-%hour%*

Backup mode: *Differential*

The best way is to change these settings in the task created above under 1. and store it using the function *Save as* (e.g. as *Bu-Diff*).

3. Insert the **full backup into Windows Task Scheduler:**

In the **Control Panel**, select the full task (*Bu-Full*) and add this to Windows Task Scheduler by clicking the button provided. Select *Daily start at 08:00*.

4. Insert the **differential backup into Windows Task Scheduler:**

In the **Control Panel**, select the full task (*Bu-Diff*) and add this to Windows Task Scheduler by clicking the button provided. Select *Daily start at 11:00* and use **Advanced settings** to set **Repeat task** to *every 3 hours* and **duration** to *10 hours*.

On the **destination drive** the following **directory structure** will be created:

Seven directories *Bu-Mon*, *Bu-Tue*, *Bu-Wed*, ..., *Bu-Sun* in each of which appear the subdirectories *Full* for the full backup and *D-11*, *D-14* and *D-17* for the differential backups.

2. Example for an alternating schedule with daily backups for several weeks

On every Monday, a full backup shall be performed at 19:00 and then with differential backups on the other days of the week also at 19:00. No backups shall be overwritten until the 5th week. The destination is a hard disk with the volume name *Backup*.

1. Create a task for a **full backup** with the following settings:

Destination: *:Backup:\W#w#4%\Full*

Directories to backed up: Select as required

Settings for backup destination: *Single files* and *Separate directories for drives* (recommended)

Compress files: *yes* (recommended)

Backup mode: Either *Full* or *Update (with the Archive bit options Use and Reset checked)*

In the case of *Full*, all files in the destination directory will be deleted and then all files copied from the source anew. This may take an appreciable length of time. In the case of *Update*, only new and changed files will be copied, which will take less time. On the other hand, all files deleted from the source directory will be retained in the target directory. To avoid this, it is recommended also to use **Synchronization**.

If you wish, you can in addition select other features, e.g. to encrypt files or send a mail notification. Finally the configured task will be saved as a file using a suitable name (e.g. *Bu-WW*).

2. Configure a **differential backup** using the same settings as above with the following exceptions:

Destination: *:Backup:\W#w#4%\%dow%*

Backup mode: *Differential*

The best way is to change these settings in the task created above under 1. and store it using the function *Save as* (e.g. as *Bu-WD*).

3. Insert the **full backup into Windows Task Scheduler**:

In the **Control Panel**, select the full task (*Bu-WW*) and add this to Windows Task Scheduler by clicking the button provided. Select **Weekly start on Monday at 19:00** and use **Advanced settings** to set the option **Run task as soon as possible after a scheduled start is missed**.

4. Insert the **differential backup into Windows Task Scheduler**:

In the **Control Panel**, select the full task (*Bu-WD*) and add this to Windows Task Scheduler by clicking the button provided. Select **Weekly start on all days except Monday at 19:00** and use **Advanced settings** to set the option **Run task as soon as possible after a scheduled start is missed**.

On the **destination drive** the following **directory structure** will be created:

Four directories **W1**, **W2**, **W3** and **W4** (one for each week), in each of which appear the subdirectories **Full** for the full backup on Monday and **Tue**, **Wed**, ..., **Sun** for the differential backups on the other days of the week.

Version-5.6 backups using Volume Shadow Copies (VSS)

For the first time Personal Backup Version 5.6 offers the possibility of using Volume Shadow Copies available since Windows XP under NTFS to back up even locked files directly. In difference to version 5.7 that has this feature included, a separate utility program is needed:

either **Volume Shadow Copy Simple Client** (Windows XP, 7 and 8) or **Vs-Toolkit** (Windows 7,8 and 10).

Prerequisites:

1. Download **vspsc** or **VS-Toolkit** as zip file
2. Extract the desired version (32 or 64 bit, Windows XP or Windows 7/8/10) into a suitable directory, e.g. *E:\Programs\Vss*.
3. Create a backup task (e.g. *BuAppData.buj*) to back up one or more directories all located on the same drive, e.g. *C:\Users\<Name>\AppData*
4. Create a batch file (*BuAppData.bat*) to be used by the program *vspsc* to start the backup:

```
@echo off
call "%ProgramFiles%\Personal Backup 5\Release\Win32\Persbackup.exe" /f
BuAppData.buj /repl:C=%1
```

5. Create a batch file (*StartBuAppData.bat*) to start the backup process using a volume shadow copy:

```
@echo off
e:\Programs\Vss\vspsc.exe -exec=BuAppData.bat C:
respectively
@echo off
e:\Programs\Vss\vs toolkit.exe -exec=BuAppData.bat C:
```

Processing:

StartBuAppData.bat can be started either directly from the Windows Explorer or using a suitable desktop shortcut. In both cases this must be done via right-clicking and the option **Run as administrator** even if you are logged on as a user with administrative rights.

vspsc or *vstoolkit* will at first create a snapshot of the specified volume (in this case C:) which will correspond with an internal virtual volume name, e.g. *\\?\GLOBALROOT\Device\HarddiskVolumeShadowCopyxx*.

This name will be transferred to the batch file *BuAppData.bat* and substituted for *%1* in the command line to start Personal Backup. By dint of the option */repl:C=...*, before copying files from all source directories Personal Backup will substitute the newly-created name for the snapshot for drive letter C:. In this way even locked files can be backed up without invoking errors.

After backing up is completed, the snapshot will be deleted by *vspsc* automatically.

J. Rathlev, 24222 Schwentinental, Germany, September 2020



Personal Backup Version 6

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Special notes on the current version



Overview

For all users interested in more in-depth details I made up the following information.

- [Unicode character set](#)
- [Passwords](#)
- [Using the Windows Task Scheduler](#)
- [Compressing as gzip](#)
- [Creating zip archives](#)
- [Encryption](#)
- [Length of file paths](#)
- [Backups on logoff/shutdown](#)

Unicode character set

From Version 5.0, **Personal Backup** has been created using an IDE which has full Unicode support (currently **Delphi 10 Seattle**). So the ANSI (ISO-8859) filenames limitations on copying files are obsolete. In addition, path lengths may be longer than 260 characters.

The most important enhancements:

- Display file and directory names using other than ISO-8859 characters (e.g. Greek or Cyrillic)
- Backup such files as gzip and zip
- Backup such files via FTP provided that the server supports UTF-8
- Mail delivery in UTF-8 format
- Save, restore and delete files with path lengths > 260 characters

Passwords

All passwords for FTP, for SMTP and AES encryption must be coded per ISO-8859-1.

Using the Windows Task Scheduler

Since Windows 7, there has been the new version 2.0 of the Task Scheduler. In addition to the features of the former version some new options became available, such as running a backup after a missed scheduled start or the use of a user account without specifying a password.

The current version of **Personal Backup** will only support this new Windows Task Scheduler in its **integrated wizard**. As a result, this function is no longer available on systems running Windows XP.

Compressing as gzip

Filenames

The existing standard for the gzip format (**RFC1952** of 1996) calls for the filename to be stored in the file header using the ISO-8859-1 character set. I could not find any recommendations as to how to handle Unicode filenames.

The current Linux version of the program gzip used for creating and reading gz archives differs from the above standard and stores filenames in UTF-8 format. The OS byte in the header is set to 3 (Unix).

Until now, Personal Backup has set this byte to 0 (FAT) and saved the filename per ISO-8859-1. To be compatible with previous versions and also to support Unicode, two variants are used in Version 5:

- The filename consists only of characters contained in ISO-8859: OS = 0 (FAT) => Filename is stored in ISO-8859-1
- The filename also contains other characters: OS = 11 (NTFS) => Filename is stored in UTF-8

Hence the problem arises that other programs (such as WinZip or WinRar) will correctly detect the stored filename only with the first variant. This has, however, no effect on the unpacking of the files.

It would of course be better to use the unused bit 5 of the FLG byte as a criteria for the coding of the filename. The current zip format does it in this way (see below).

Files > 4 GB

The existing standard for the gzip format (RFC1952 of 1996) reserves a 32 bit value for the length of the uncompressed file. For files > 4 GB this value is written module 2^{32} . But like many file archive programs (e.g. 7-zip), Personal Backup supports the use of an extra field with the signature *0x0100* containing the real file size.

Encrypted gzip files

For more details refer to the description below.

Creating zip archives

The current [zip format specification version 6.3.6 from April 2019](#) defines how Unicode filenames are to be processed: if bit 11 of the "general purpose bit flag" is set, filename and comment are in UTF-8 coding. Personal Backup uses this convention. Most of the current file-compression programs also support this new format. Among those that do are WinZip Version 12, WinRar Version 3.80 and 7-Zip Version 9.20, as well as the Windows Explorer.

Encrypted zip archives

For more details refer to the following description.

Encryption

Files are encrypted using the [AES method](#), with the same routines as in WinZip (see Info at [WinZip](#) and at [Brian Gladman](#)). The file format created depends on the backup mode:

No compression (proprietary file format):

Data is written to file in the same way as is done with zip but without prior compression ([more info](#)). As this is a non standard format, a restore can only be made with the internal function of the program.

```
Signature   : 4 Bytes: JREx  (since version 5.8.5)
Enc-Header  : 10, 14 or 18 bytes (depending on the encryption depth):
                Salt value (8, 12 or 16 bytes) + password verification value (2
bytes)
Enc-Data    : Same number of bytes as original file
Enc-Trailer : 10 bytes Authentication code
```

With compression (modified gzip format):

Data is first compressed using the gzip algorithm and encrypted using the AES method. The encrypted data has its own verification, so the gzip checksum is always set to 0. The gzip file format is specified in [RFC1952](#). Bear in mind that this standard does not contain recommendations for encryption. The format described below just follows its specifications. For a restore, the internal function of the program is required.

Note: starting with Version 5.2 encrypted gz files will have the file extension [gze](#).

```
Gzip-Header  : 10 bytes as default
                new: Flag byte: bit 5 = encrypted
Extra field  : (ID=1) Optional for files > 4GB - 20 bytes
Extra field  : (ID=$524A) Signature JR + specification of the encryption
depth
                (since version 5.8.5) - 6 bytes
Filename     : ISO-8859-1 (OS=0 - FAT) or UTF-8 (OS=11 - NTFS)
Enc-Header   : 10, 14 or 18 bytes (depending on the encryption depth)
Enc-Data     : Same number of bytes as compressed original file
Enc-Trailer  : 10 bytes (see above)
Gzip-Trailer : 8 bytes
                CRC always = 0
```

Zip file (largely compatible with the zip standard):

A description of the zip format can be found at [PkWare](#) and notes on encryption at [WinZip](#). [Personal](#)

Backup creates archives with encrypted file data compatible with WinZip. For restore, any compression program supporting these specifications can be used.

Important note: Since version 5.9.4, Personal Backup offers the additional facility of encrypting also filenames. This makes the created zip archives **no longer fully compatible** with **WinZip**. If you wish to open such an archive using a program like **WinZip** or **7zip**, the original directory structure will not be displayed. Instead, all files and directories are marked with a sequential hex number. The real name is encrypted and stored in an extra field within the local file header. To unpack this, the internal **restore function** or the add-on program **PbRestore** is required.

Amendment to the WinZip format:

Local File Header / Central Directory Header:

general purpose bit flag - Bit 8: filenames are encrypted

Extra Data Field for encrypted filenames

Offset	Size	Contents
0	2	Header ID of extra field (0x9909)
2	2	Data size (n) in bytes (variable)
4	n	Encrypted filename

Length of file paths

For filenames (inc. path), the 260-character limitation still applies to all Windows versions at certain points. (**more info**). This affects all applications using the non-Unicode versions of the Windows API calls and under Windows XP also all applications using the Windows Shell components, such as Explorer. This limitation appears no longer to apply first of all under Windows 7.

Everywhere where Personal Backup refers to shell components (e.g. in a directory- or file-selection dialog), the path length limitation applies even for Version 5 except with Windows 7 and newer.

Internally, the program uses the path prefix "\\?\\" for all file processing functions (e.g. when copying files) whereby a maximum length of about 32000 characters is allowed. Since Version 5 it is therefore possible to backup, restore and delete files with paths exceeding the above limit, even when some other programs (including Windows XP Explorer) will fail on scanning such a directory tree. A file manager that supports long filenames is the **Total Commander** (since version 7.5).

Backups on logoff/shutdown

Unfortunately this is not really supported by the Windows system. Usually, Windows settings are adjusted for a fast shutdown. To perform a possibly long lasting, is obviously contrary to this aim.

But there is a way to outwit the system at this point. **Personal Backup** catches the Windows message **WM_QUERYENDSESSION** which is sent to all running programs before logoff or shutdown and interrupts this process. After performing all scheduled backups it will reinitiate the logoff or shutdown using one of the API functions *ExitWindowsEx* or *InitiateSystemShutdownEx*.

To do so, the following conditions must be fulfilled:

1. The Registry key *HKEY_CURRENT_USER\Control Panel\Desktop\AutoEndTasks* must be set to "0" (**more information at Microsoft**).
2. Neither the system nor any other application will enforce the shutdown by ignoring the response to the system message to interrupt the shutdown as mentioned above. The program cannot influence this in any way.

Possibly also the following Registry keys are of importance:

- *HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\WaitToKillServiceTimeout* = <time> wait time in ms
- *HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Windows\System\AllowBlockingAppsAtShutdown* = 1 disable automatic termination of applications, = 0 enable automatic termination of applications, (refer also to the Group Policy setting *Administrative Templates System Shutdown Options*)

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Personal Backup Version 6

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Appendix



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Data compression uses the ZLib routines by **Jean-loup Gailly** and **Mark Adler**

©1995-2005 Jean-loup Gailly and Mark Adler - <http://www.zlib.net/>

The routines for filtering using regular expressions were written by **Andrey V. Sorokin**

©1999-2004 Andrey V. Sorokin - **TRegExpr**

Encryption is carried out using the routines written by **Brian Gladman**.

© 2002, Dr. Brian Gladman - <http://www.gladman.me.uk/>

FTP and mail components are from the **Indy 10** package.

© 1993 - 2015, Chad Z. Hower (Kudzu) and the Indy Pit Crew - <https://www.indyproject.org/>

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit

© 1998-2017 The OpenSSL Project - <https://www.openssl.org/>

The patches for **Indy OpenSSL** (Version 1.0.2) are supplied by **Frederik Winkelsdorf**

© 2015-2019 Frederik Winkelsdorf - see [Indy archive](#)

The multilingual environment uses **GnuGetText for Delphi** by Lars B. Dybdahl ([more infos](#))

© 2005, Lars B. Dybdahl and others - **GNU GetText for Delphi Toolkit on SourceForge**

Program installation is performed using **Inno Setup** by Jordan Russell

© 1997-2018 Jordan Russell - <http://www.jrsoftware.org/isinfo.php>

Proofreading of the English program GUI texts and help files by Jim Scharfenberg Jones

Donate

Disclaimer:

There is no warranty for correct operation of the program and results. The author is not liable for any damage to hardware and software arising out of the use of the program. This applies also to those parts of the program not written by the author (see above).

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1. Using the program

The program may be used by anyone in any way, for any purpose, free of charge.

2. Distributing the program

The program may be distributed by any means, provided that the original files as supplied by the author remain intact and no charge is made other than for reasonable distribution costs. The program may not be distributed as a component of any commercial product without a prior license agreement with the author.

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