



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev

---

### Contents

- Overview
  - Installation and update
  - Special notes on Version 5
  - Desktop
  - Main menu structure
  - Program preferences
  - Creating and editing a backup task
  - Opening and saving backup tasks
  - Selection of directories and files
  - Task settings
  - Other options
  - Regular expressions
  - Running a backup
  - Log file
  - Automatic backup
  - Personal Backup in the Windows notification area
  - Automatic backups using Windows Task Scheduler
  - Verification of backed up files
  - Restore data from backup
  - Clean up a backup directory
  - Keyboard shortcuts
  - Command line options
  - Alternating backups using Windows Task Scheduler
  - Start Backup under different account
  - Backup of Thunderbird data
  - Tutorials
  - Appendix
- 

J. Rathlev, 24222 Schwentinental, Germany, January 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## 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 Server 2003/2008/2012**, the 64-bit only under **Windows 7,8 and 10 (64-bit)** and **Windows Server 2008R2/2012**.

You can **configure** and **store** as many backup tasks as you wish. The **selection** of the files to be backed up is made on a by-folder basis. All subfolders 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.

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

Performing the backup can be done manually or automatically. 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 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**).

**Automatic backup** can be started on login, at a selectable time of day, on logout or on shutdown. You can make scheduled backups with destination paths changing daily or weekly.

For individual schedules it is easy to start a backup using **Windows Task Scheduler**. The configuration can be made using a program internal wizard.

In addition there are functions to **verify** and **restore** backed-up data and to **delete** selected files and directories. The program has full Unicode support which overcomes the ANSI (ISO-8859) filenames limitations on copying files. Also pathlengths may be longer than 260 characters.

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

## The functions in detail:

- 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
- 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 splitted into separate files of appropriate size.
    - One zip file (files > 4GB 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 backup schedules:
    - 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 the Windows Task Scheduler
  - Extra tool **PbPlaner** to create and configure alternating backups using Windows Task Scheduler
  - Automatic check for updates on starting the program
  - Internal restore function of backed-up files:
    - From backup into single files
    - From backup into zip files (single or folder-separated)
    - Dialog for selecting files for restore
    - Restore using FTP connection
    - Automatic decryption
  - Extra tool **PbRestore** to restore single files (even when compressed and/or encrypted)
  - Function for deletion of files and/or directories:
    - Selection by filters and/or age
    - Synchronize backup directories

- Function for verification of backed-up files

## 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)
- **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, French, Dutch, Italian, Spanish, Polish, Portuguese, Hungarian** and **Russian**. 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.

---

J. Rathlev, 24222 Schwerin, Germany, April 2018



# Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Overview

- [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-5.x.yz.exe* (x.yz 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 5*

**Windows 7/8/10 (32-bit):** *C:\Program Files\Personal Backup 5*

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 5*

**64-bit version:** *pb-setup-x64-5.x.yz.exe* (x.yz 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 5.*

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).

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

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-5.x.yz.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

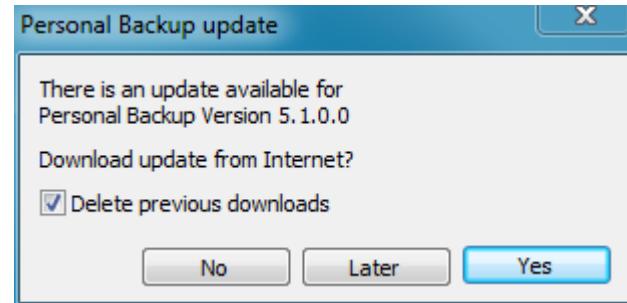
Click *Check for update* in the *Help* menu of the program to check if an update is available. You can download and install it immediately.

## Automatic updates

If this option is enabled (default), the program tries to connect 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.

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 5 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 %.

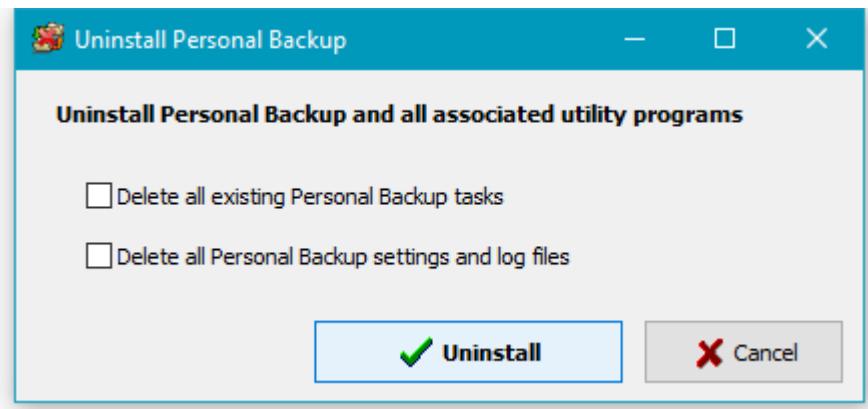
```
@echo off
echo Start Personal Backup from USB flash drive
start PersBack\PersBackup.exe /i:%%progpath%%\pb.ini /t:%%progpath%%\tasks
```

```
/logdir:%%progpath%%\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\PersBackup5
- **Windows XP:** C:\Documents and Settings\<Username>\Application Data\PersBackup5

**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*.

---

J. Rathlev, 24222 Schwentinental, Germany, April 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Special notes on the current version

From Version 5.0, **Personal Backup** has been created using an IDE which has full Unicode support (currently **Delphi 10 Seattle**). So the 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

## 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 6.3.2 from October 2007** 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 now support this new format, too. Among those that do are WinZip Version 12, WinRAR Version 3.80 and 7-Zip Version 9.20, whereas Windows Explorer does not yet support the new format even under Windows 7.

## 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

```

## **Passwords**

All passwords for FTP, for SMTP and AES encryption must be coded per ISO-8859-1.

## **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. With 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. One file manager that supports long filenames is **Total Commander Version 7.5**.

---

*J. Rathlev, 24222 Schwentinental, Germany, April 2018*

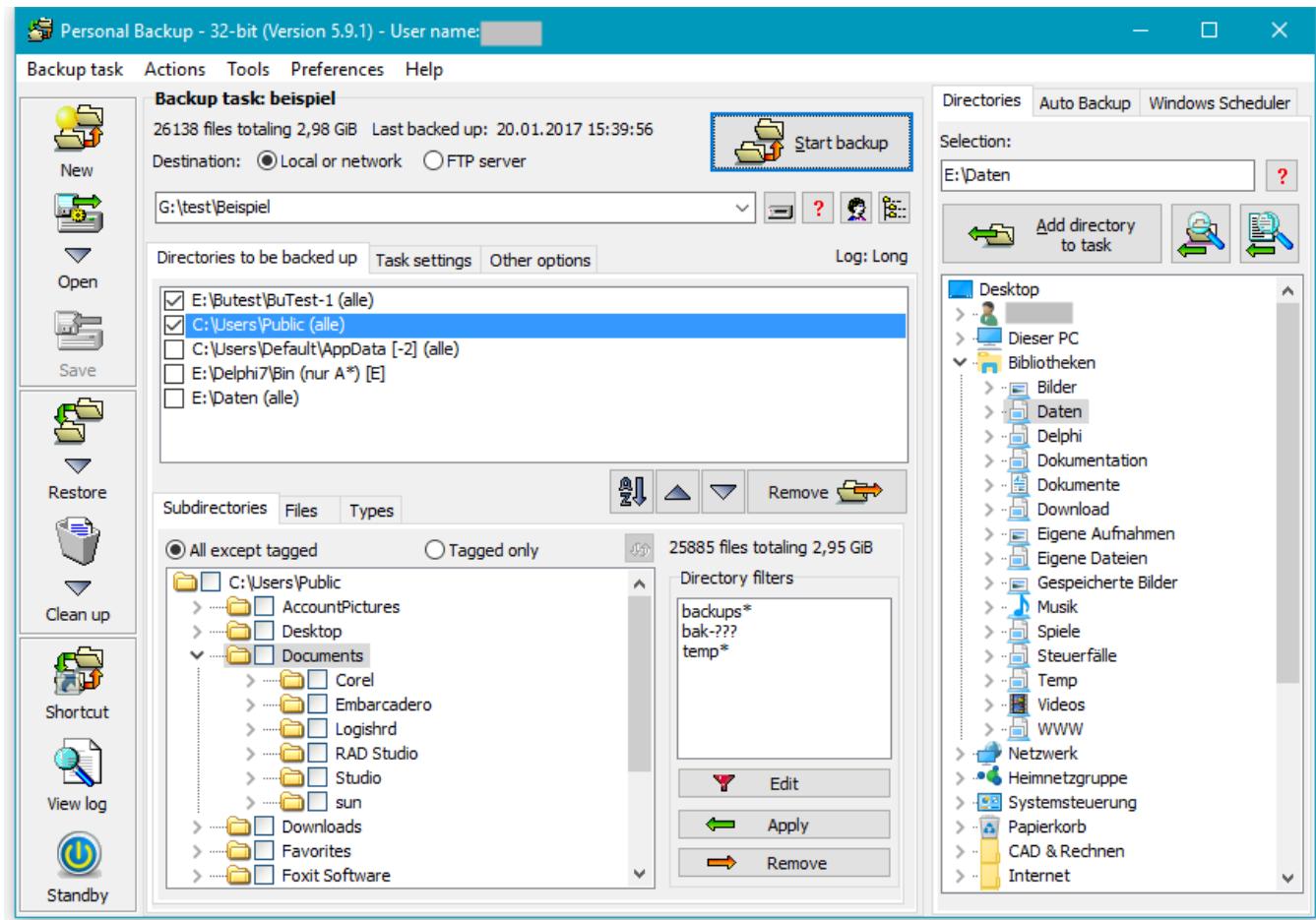


## Desktop

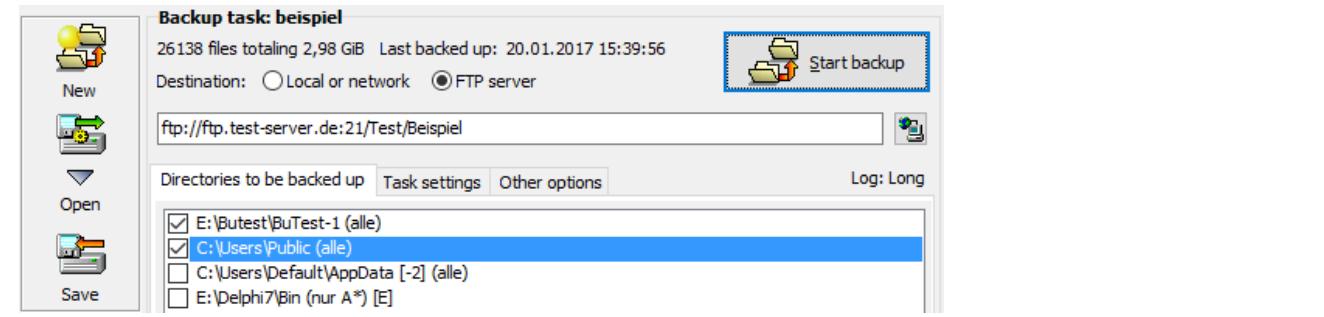
In many areas of the desktop right-clicking opens a context menu (overview).

### Normal window

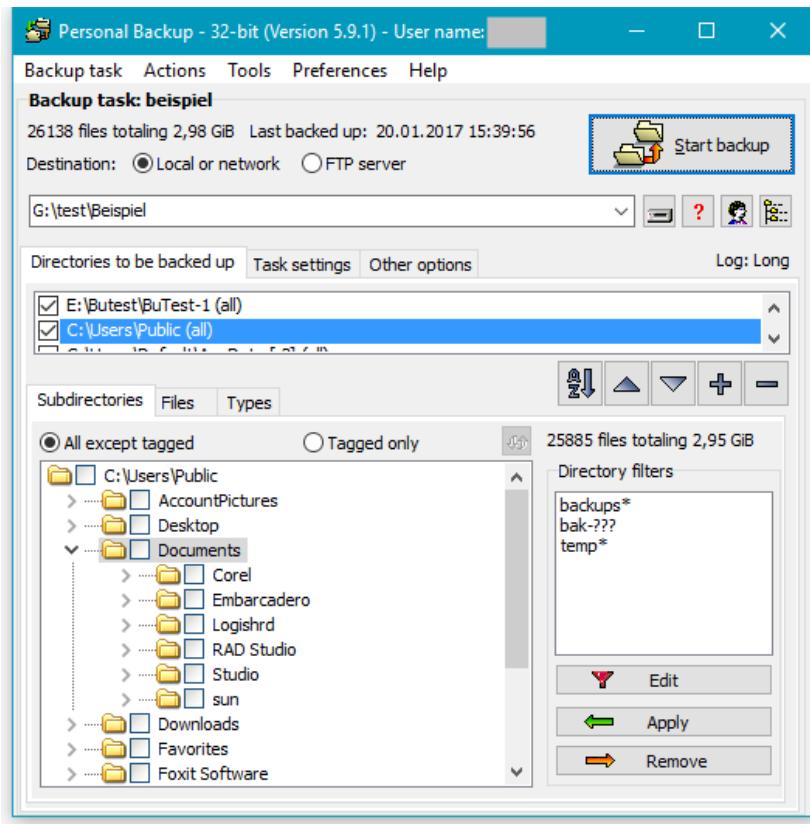
After starting the program, the desktop window shown below is opened. Depending on the selection for the destination (Local drive or Windows network or **FTP server**) the upper part of the window is displayed slightly different. The image below shows the desktop for a destination on a local drive (e.g. an external drive connected via USB). Click on a region of the following screenshot will lead to specific help for that region:



When selecting an **FTP server as destination**, the upper part of the desktop window changes (see below). In the text field the destination is shown as `ftp:<server name>:<port>/<directory>`. This field cannot be edited manually. You must click the button at right to open the **FTP dialog**.

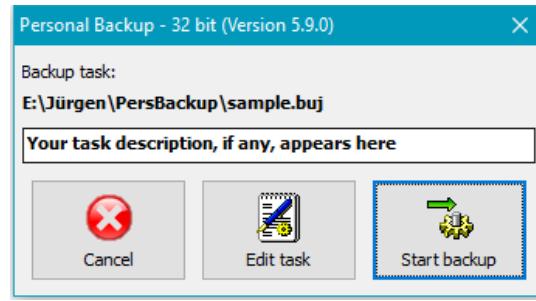


### Narrow window



## 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:



J. Rathlev, 24222 Schwentinental, Germany, January 2018



# Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Menus

### • Main menu

### • Context menus

## Main 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

**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

**Quit** - Exit program or move to background

### 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

**Open dialog ...** - Configure and carry out verification of files

**Load task ...** - Load saved Verify task and open dialog window

**Create desktop shortcut ...** - Create a shortcut to one or several selected verify tasks on the computer desktop. Double-clicking this shortcut will automatically perform these verifications one after the other.

### Restore

**Open dialog ...** - Configure and carry out a restore of files

**Load task ...** - Load saved Restore task and open dialog window

**Create desktop shortcut ...** - Create a shortcut to one or several selected restore tasks on the computer desktop. Double-clicking this shortcut will automatically perform these restores one after the other.

### Cleanup

**Open dialog ...** - Configure and carry out Cleanup of files

**Load task ...** - Load saved Cleanup task and open dialog window

**Create desktop shortcut ...** - Create a shortcut to one or several selected cleanup tasks on the computer desktop. Double-clicking this shortcut will automatically perform these cleanups one after the other.

### 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 - more infos

**View** - Display and optionally print the current log file

**Delete** - Delete the current log file

**View other ...** - Select and display any log file

**Delete old logs ...** - 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. If a relative value is specified, you can also select that the deletion of older log files will be done

automatically on every program start.

**FTP log** - Delete the FTP communication log file ([see here](#))

**View ...** - Display the FTP communication log file

**Delete ...** - Delete the FTP communication log file

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

## Tools

### 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.

**Configure backup schedules** - Launch the supplementary program **PbPlaner**, 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.

## 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 ...** - Presettings 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

**Dutch**

**English**

**French**

**German**

**Hungarian**

**Italian**

**Polish**

**Portuguese**

**Russian**

**Spanish**

## Help

**Overview** - Brief summary

**Desktop** - Show this help file

**License** - User license

**Version** - Version info

**Changelog** - Information on version history

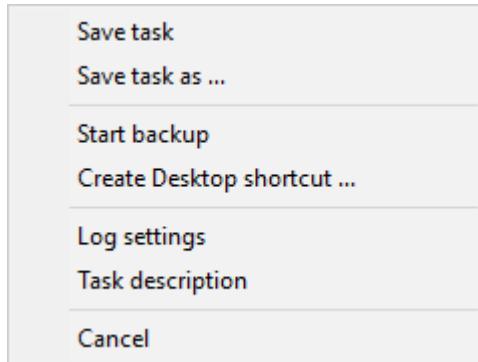
**References** - Information on components used from other authors

**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[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

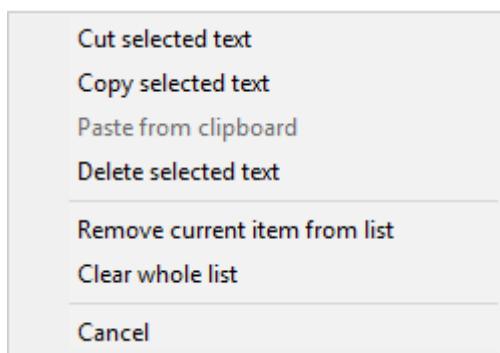
[Save task as ...](#) - Save current task to disk as new file

[Start backup ...](#) - Start current backup task immediately

[Create desktop shortcut ...](#) - Create a desktop shortcut for starting the currently-open backup task

[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.

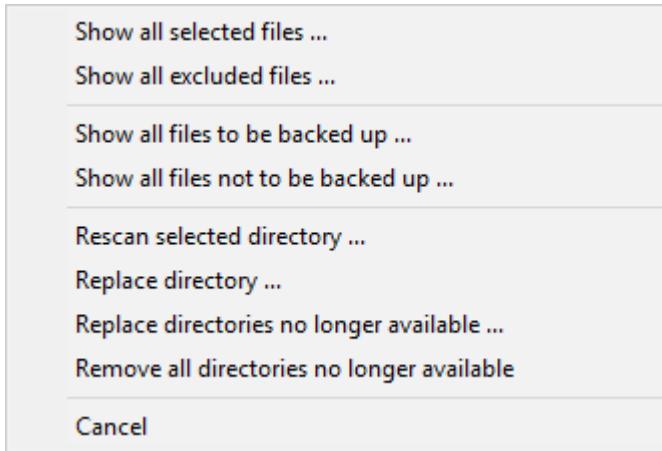
### Area "Directories to be backed up"

[Show all selected files ...](#) - Show all files 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

[Show all files to be backed up ...](#) - This item is only available when only files are to be backed up having the archive bit set or the backup is made to zip files.

[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 set or the backup is made to zip files.

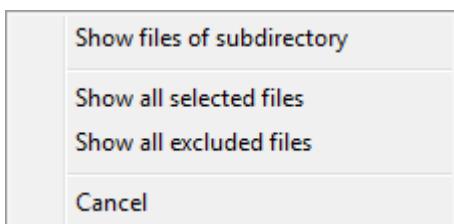


**Rescan selected directories ...** - The selected directory will be scanned to update file count and volume.

**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.

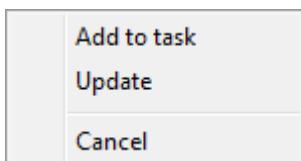


## Area "Subdirectories"

**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.



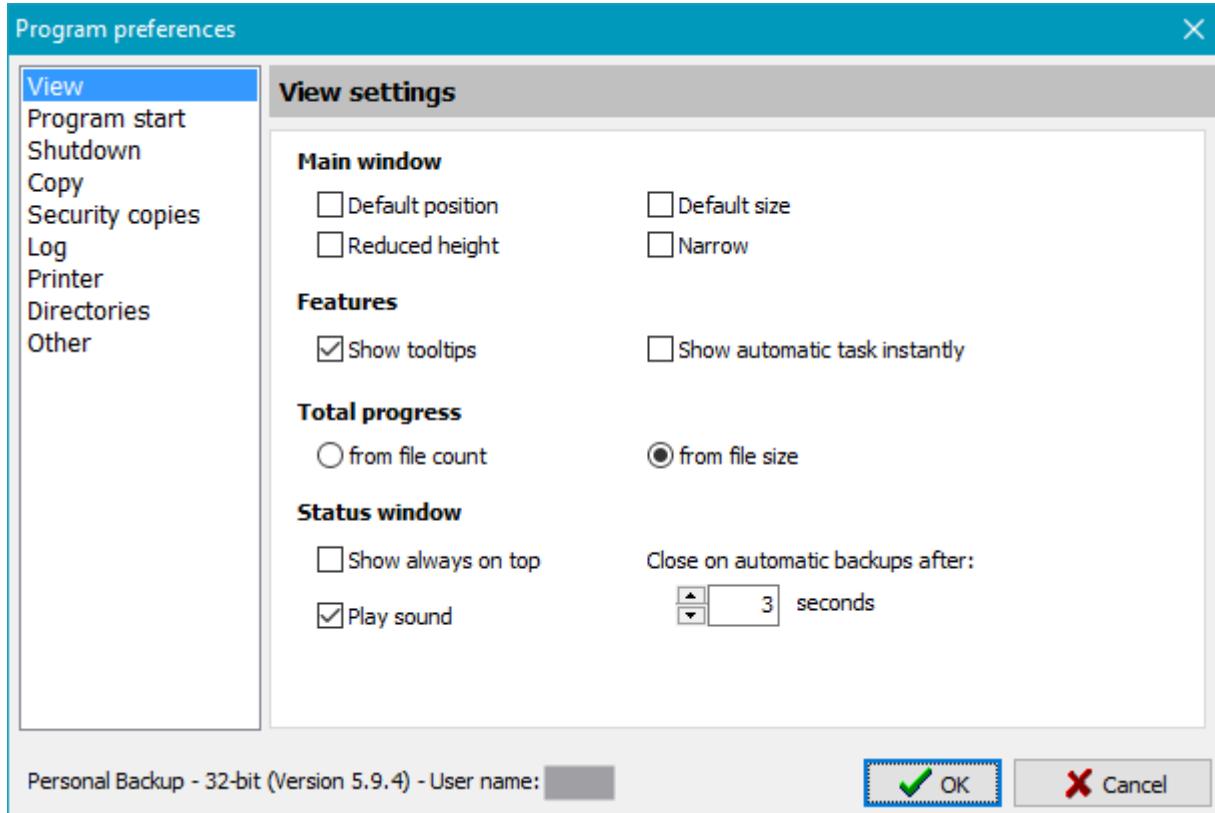
## Program preferences

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.

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

Click the **OK** button to apply changes.

## View settings



### Main 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

**Reduced height** - Change the height of the window to a value that fits smaller screens

**Narrow** - Toggle between **normal** and **narrow window** (without toolbar and start options)

### Features

**Show tooltips** - Show or hide the additional tooltips when moving the mouse over the program desktop

**Show automatic task instantly** - On selecting an automatic task by clicking one of the the task buttons **1 through 16**, this task will instantly be displayed in the main window.

### 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.

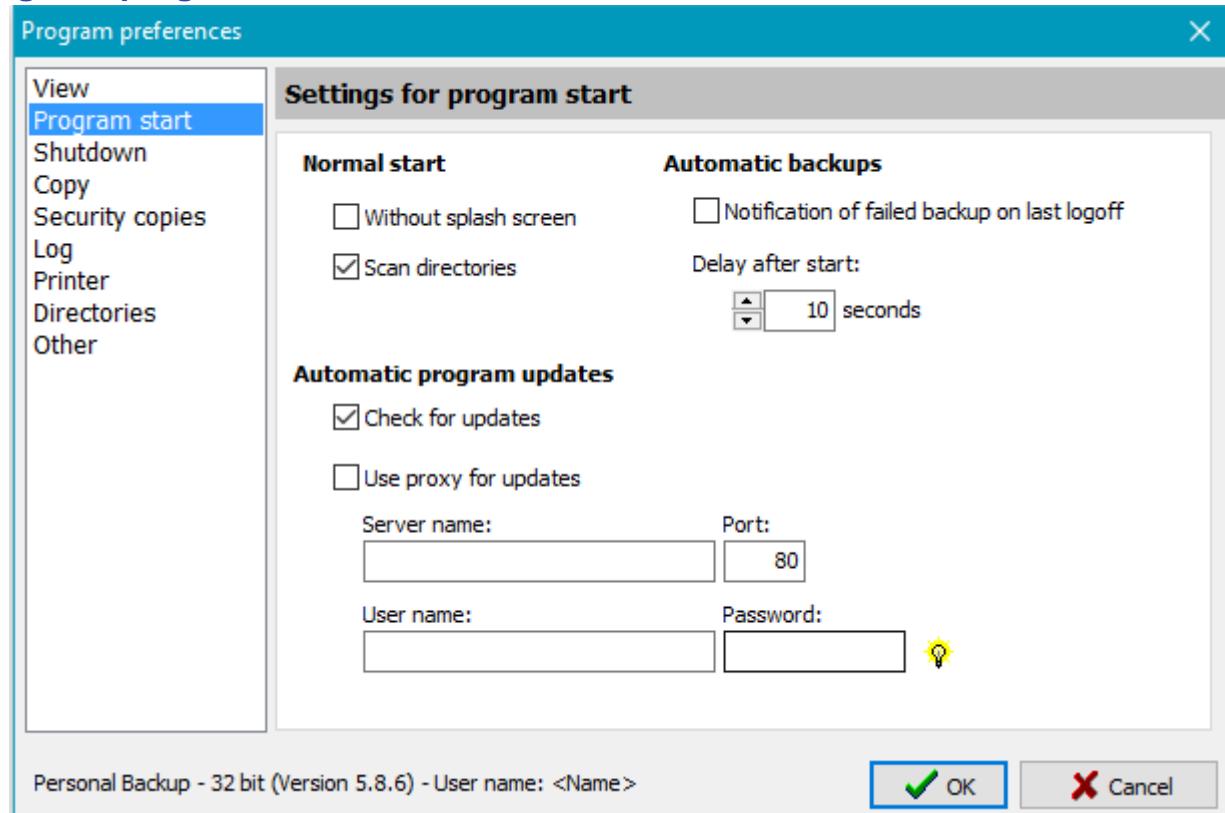
#### **Close on automatic backups after:**

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.

### **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.

#### **Automatic program updates**

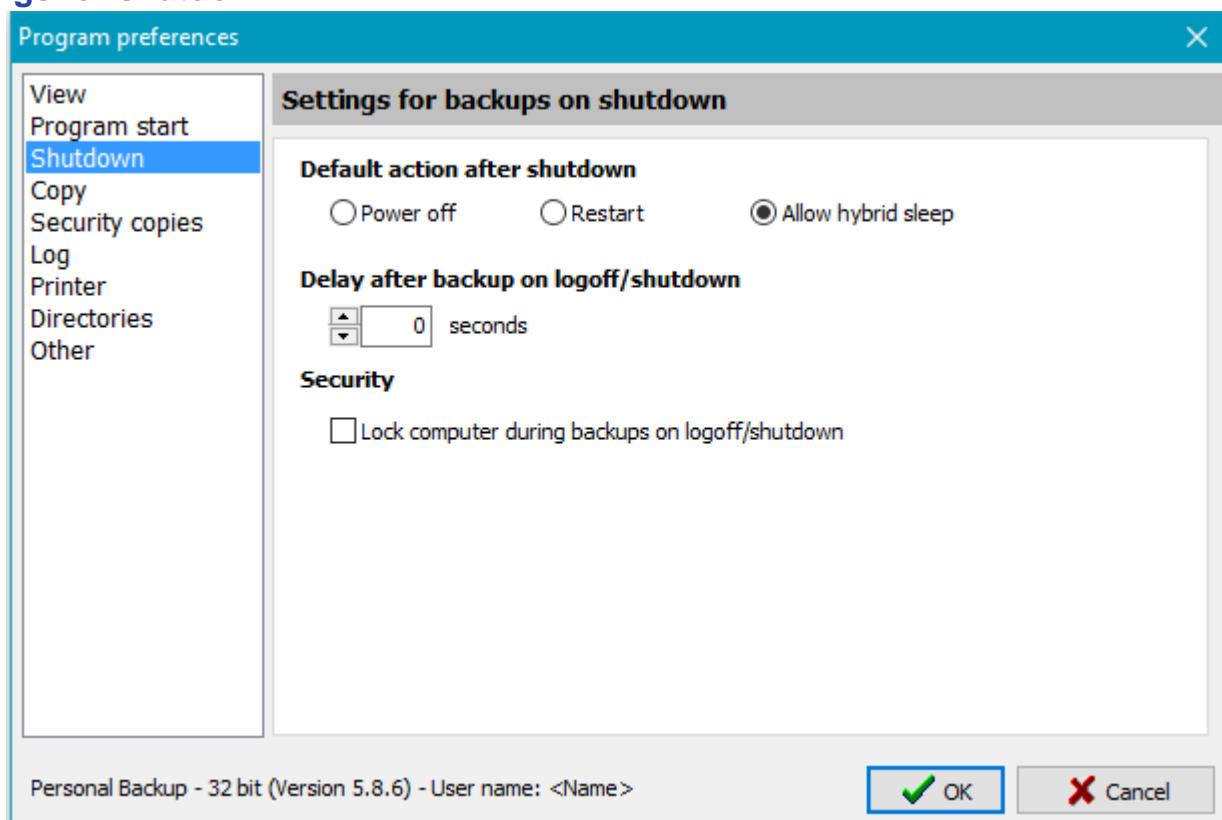
##### **Check for updates**

On starting the program a connection to the Internet will be established every 14 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 servername, port, username and password.

## Settings for shutdown



### Default action after shutdown

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).

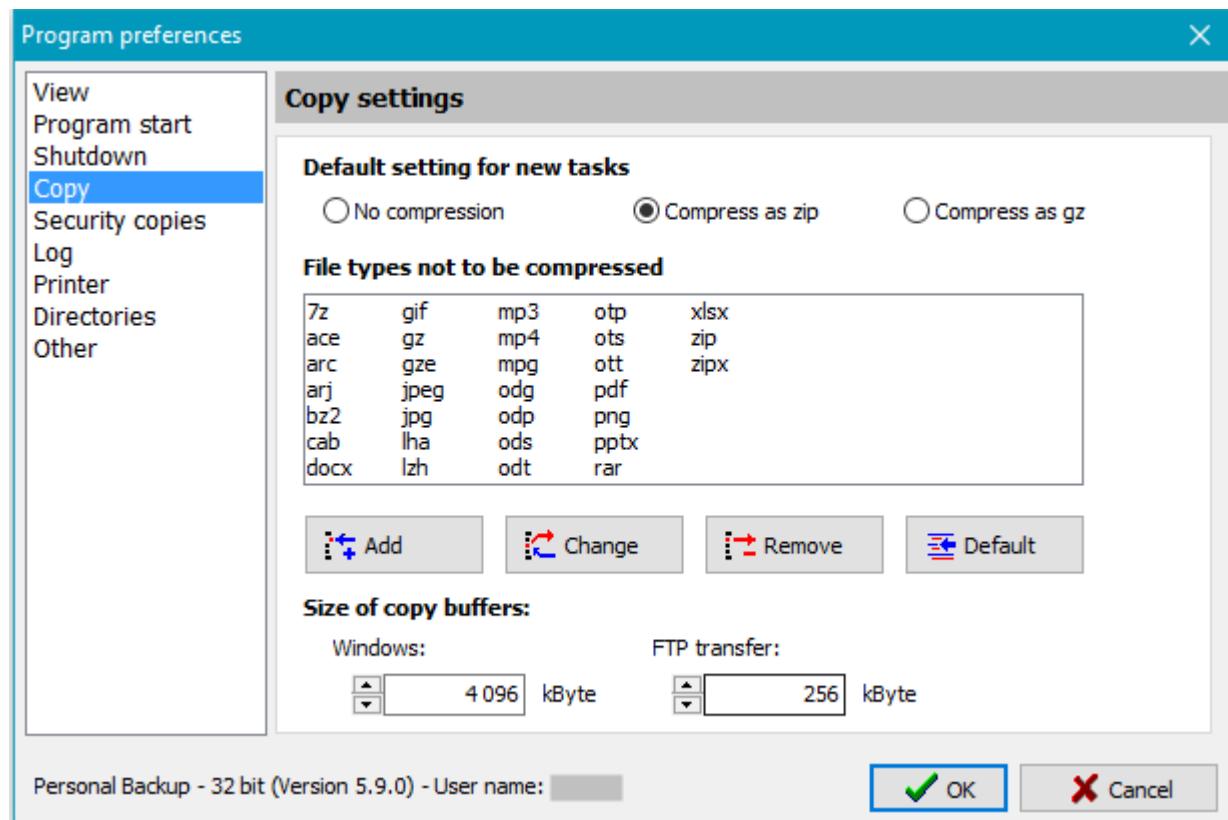
### Delay after backup on logoff/shutdown

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*

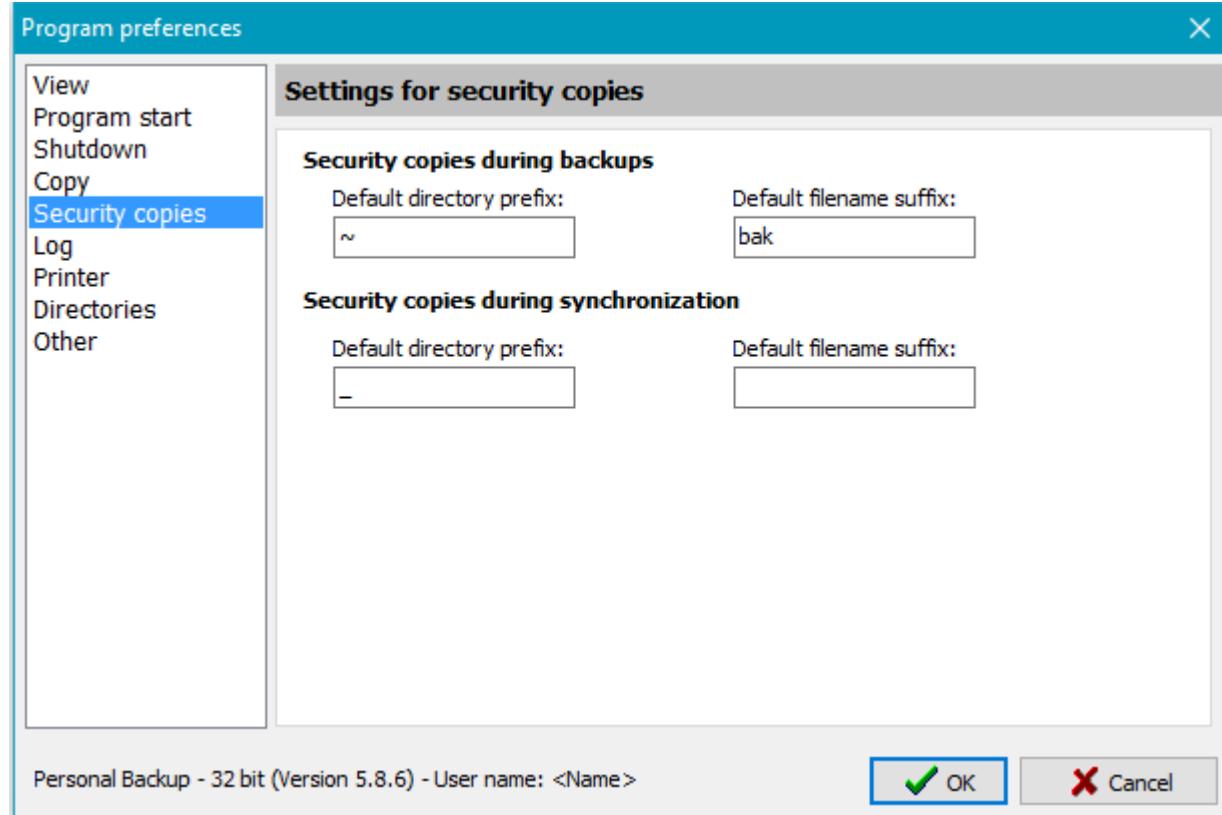
If this list of default file types changes with a new version of the program, any types not present in the user list will be (re)inserted automatically.

### 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 kB. The default values for new tasks are 4096 kB for Windows operations and 256 kB 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).

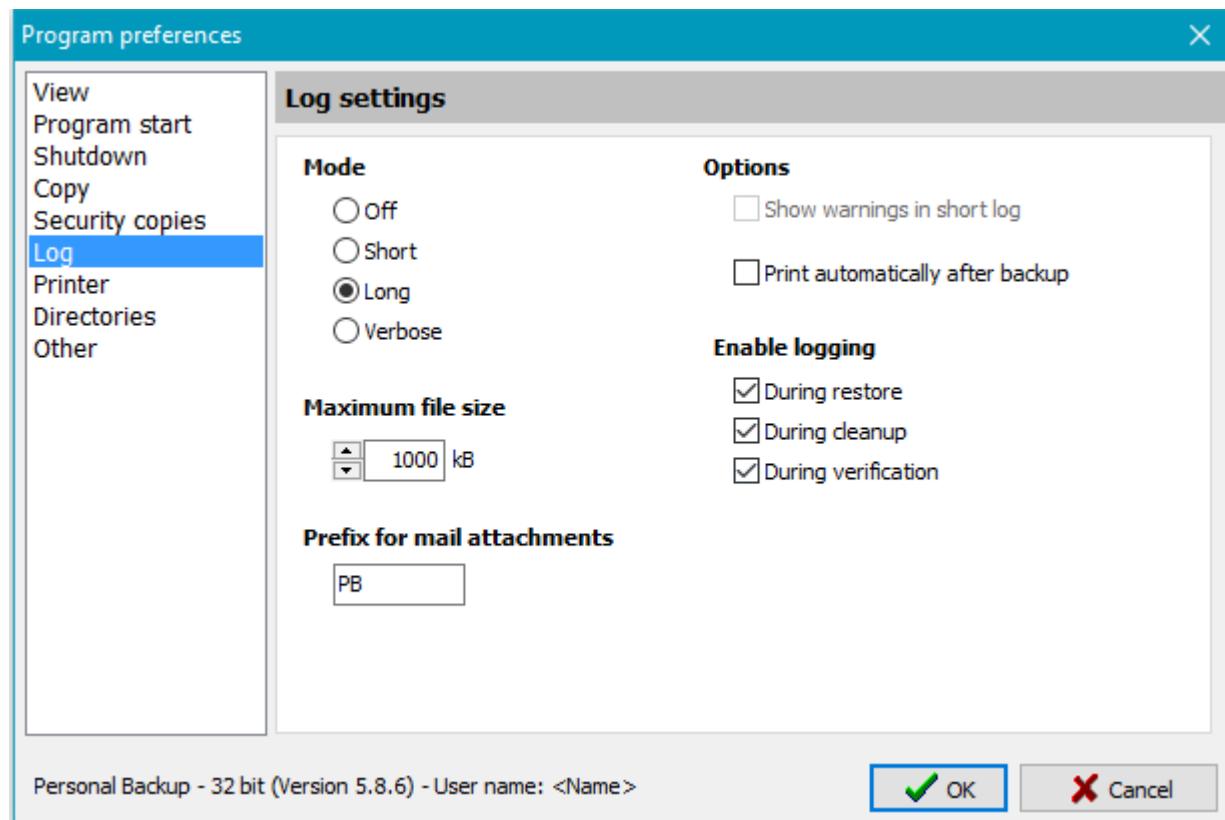
### Security copies during synchronization

**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**

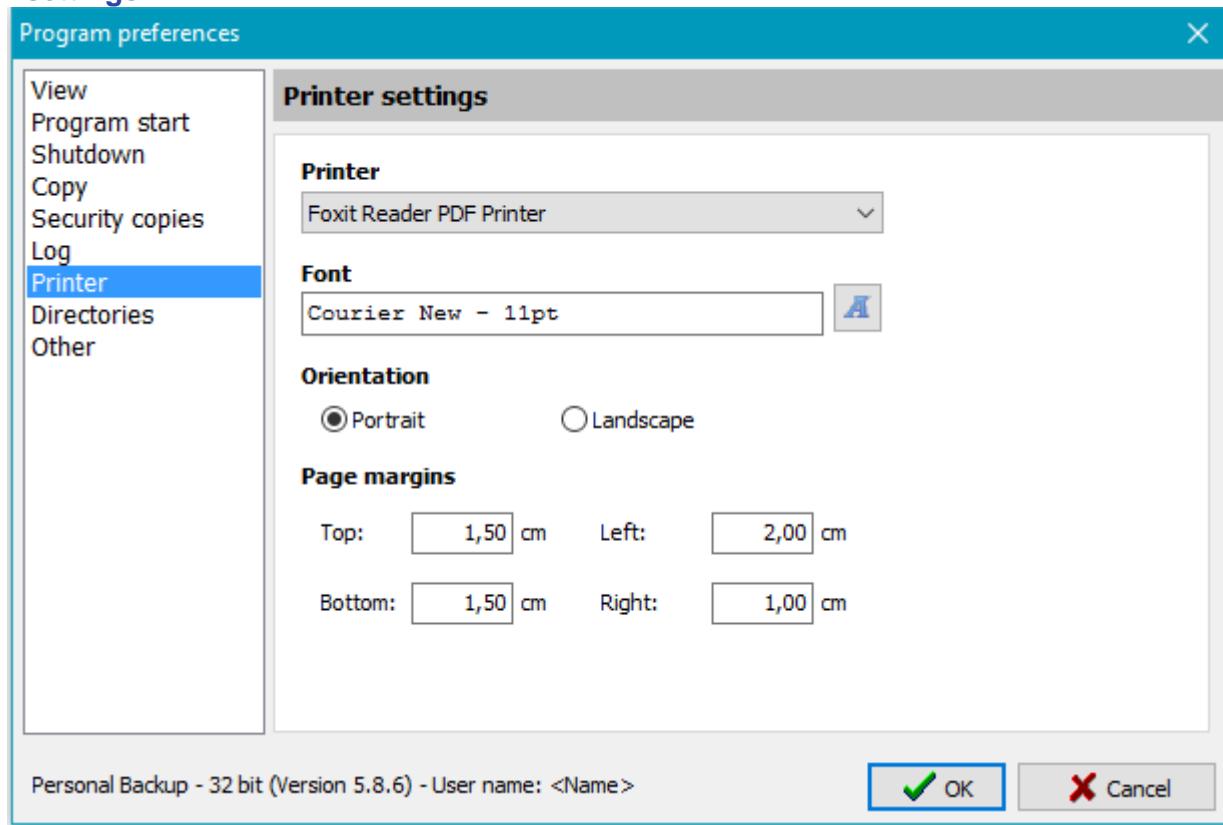
If this option is selected, the log settings as defined above will be used as default when opening the **Verify dialog**. For saved **Verify tasks** the log settings can be adjusted individually.

**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.

**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.

**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 dropdown 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.

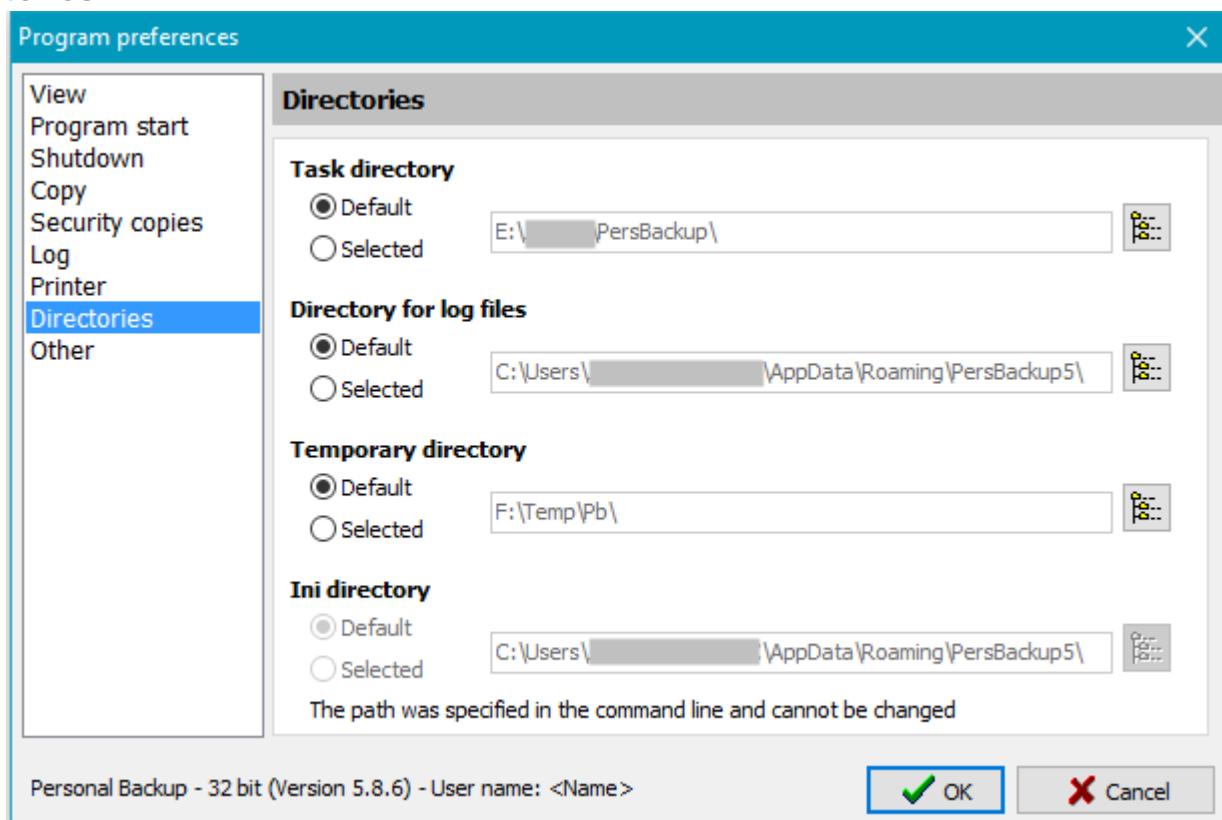
**Orientation**

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

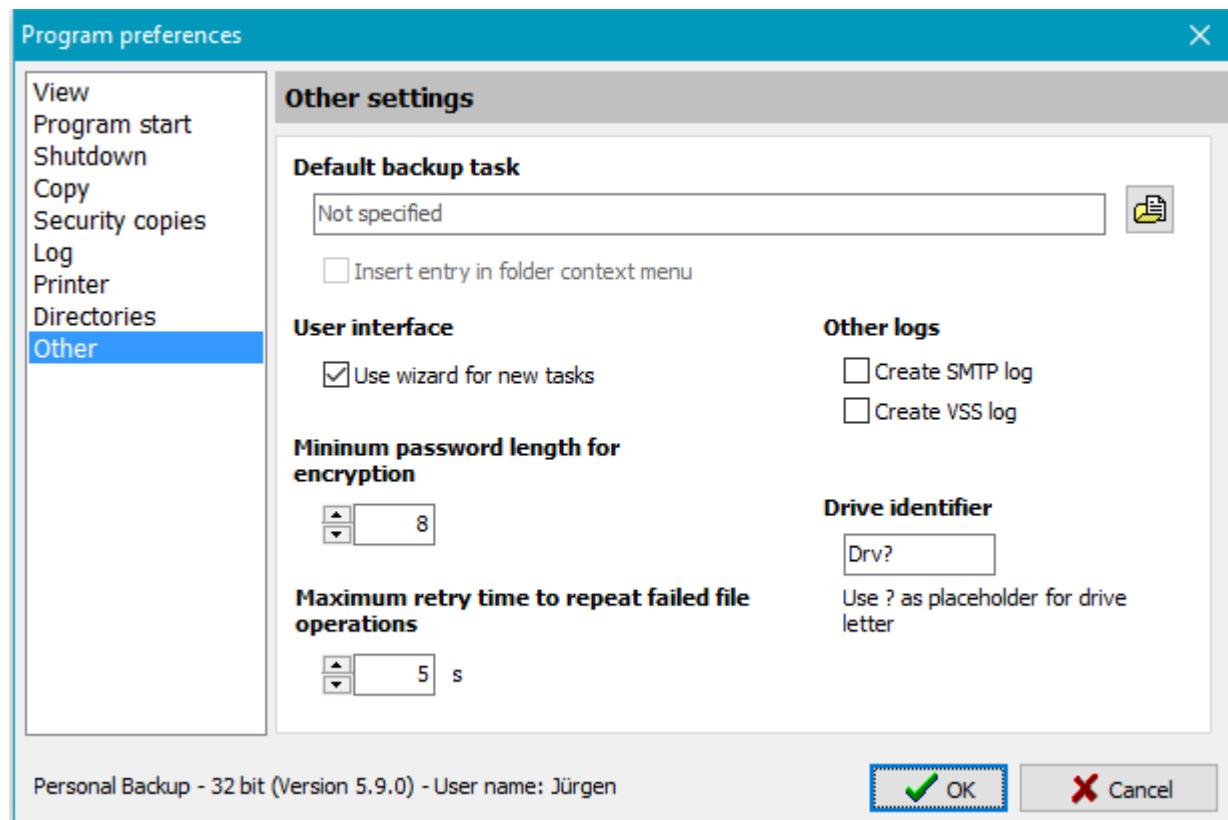
This is the location of the file *PersBackup.ini* where all the **basic settings of the program** and time schedules of the automatic tasks are stored.

**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!

---

*J. Rathlev, 24222 Schwentinental, Germany, July 2018*



## Creating and editing a backup task

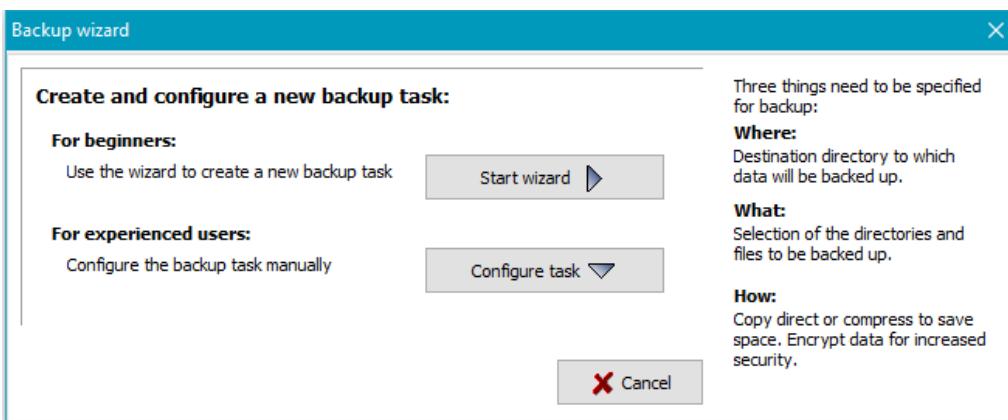
- Creating a new backup task using the wizard
- Editing the backup destination
  - Using removable drives
  - Destination on an FTP server
  - Using placeholders
- Selection of files and directories to be backed up
  - Add directories
  - Add single files
  - Display list of directories to be backed up
  - Placeholders for source directories
  - Backing up data from removable volumes
- Desktop with fully-configured task
- Removing a directory from the task
- Preview
- Extended selections
- Backup settings
- More options
- Status and error display



### Creating a new backup task

A wizard can help the less-experienced user create a backup task. The wizard will lead you through the basic settings ([Start wizard](#) button). A task created in this way can later be edited using the [program desktop functions described below](#).

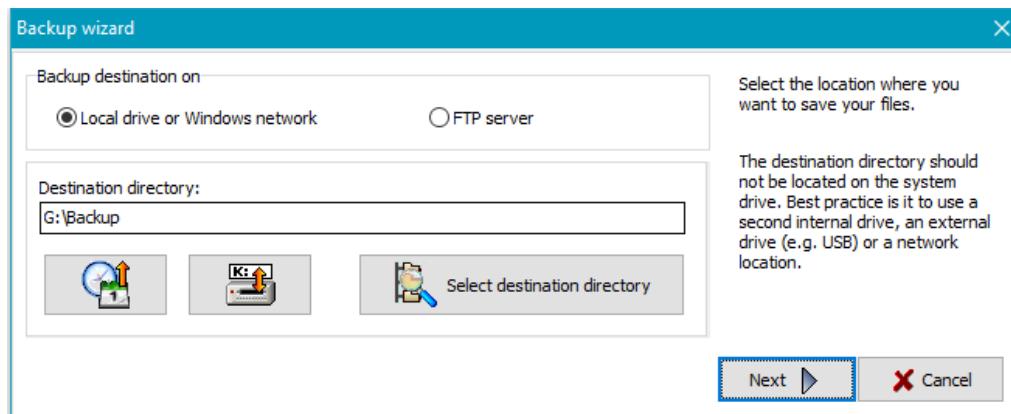
The experienced user can skip this wizard by clicking the [Configure task](#) button and entering the settings directly.



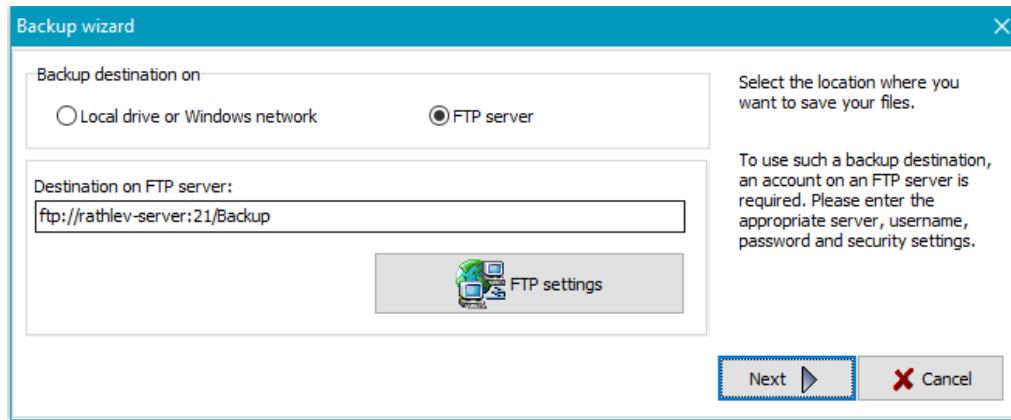
### Backup wizard

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.



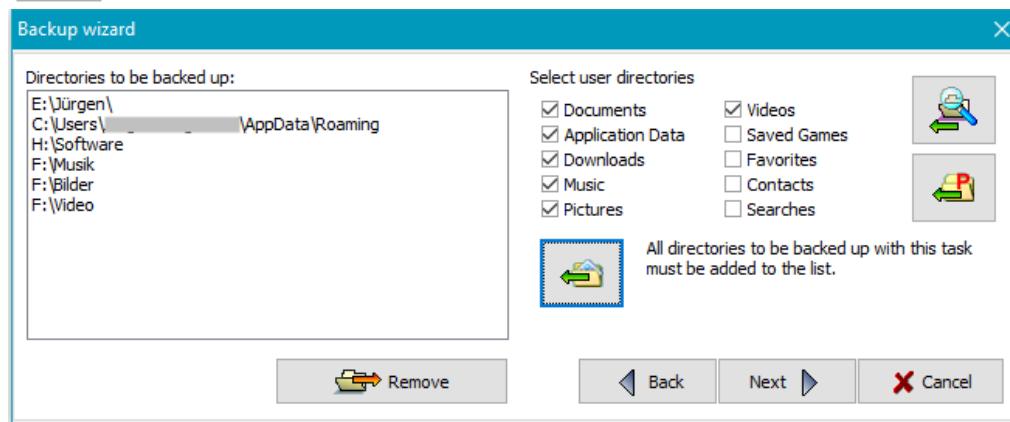
Next, select the directories you wish to back up:



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.

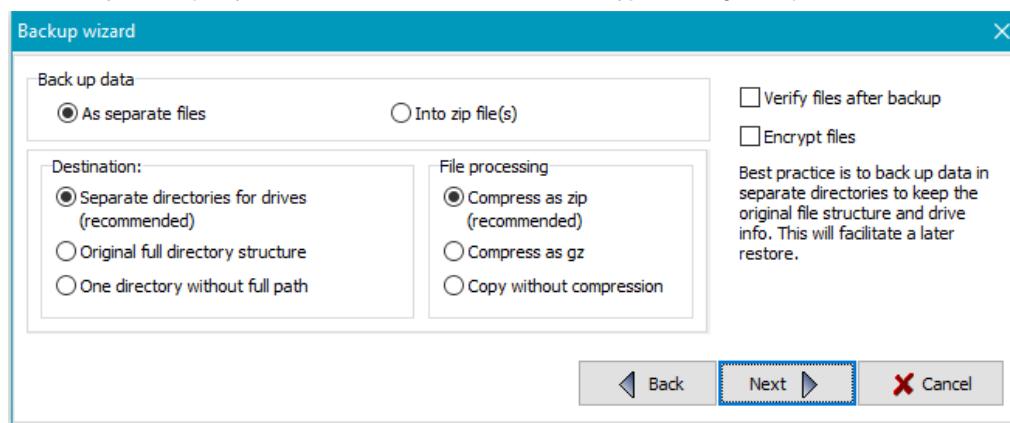
By clicking this button, any other directory can be selected for backup.

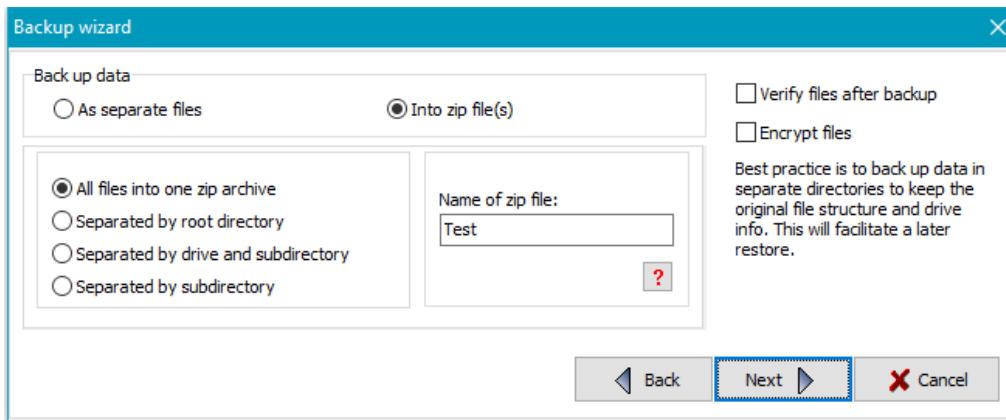


Then select **how the files are to be stored in the destination directory**: as single files using a directory structure true to original or as zip archives.

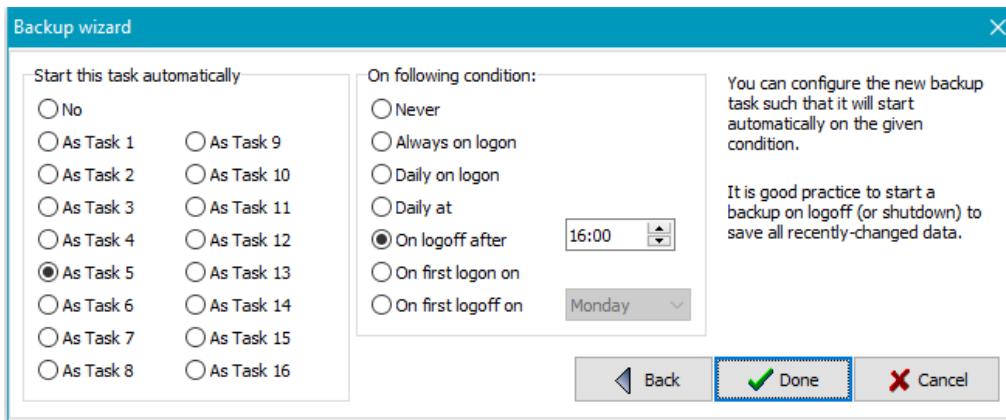
On backing up to single files the user can select if files should be copied with or without **compression**.

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.

## Editing a backup task

### Destination

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`

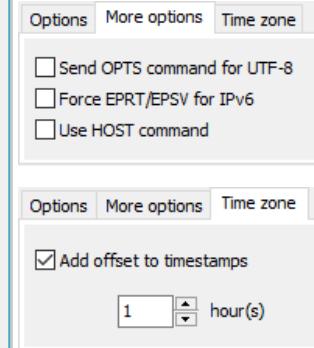
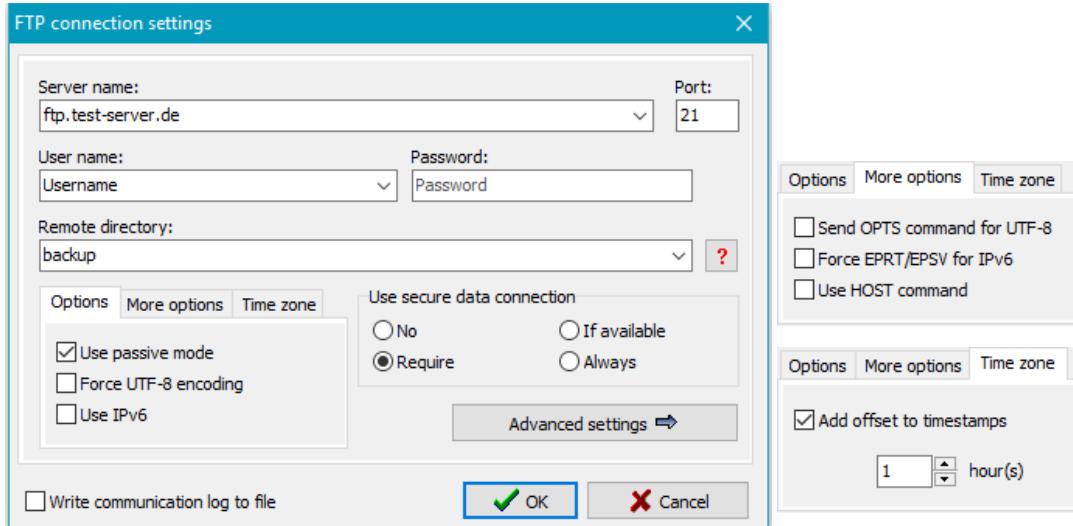
On backing up, the program will check whether a medium with the specified volume name (regardless of the assigned drive letter) is connected. If not, the user will be prompted to insert it.

#### 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.

#### 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.

#### Secure data connection: Data transfer using **TLS/SSL (FTPS)**:

- **No:** All data will be transferred unencrypted.
- **If available:** 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:** It is expected that the server supports TLS/SSL (explicit method). If not, the connection will be canceled.
- **Always:** All data transfers will be encrypted (implicit method). If the server does not support this method, then connection will fail.

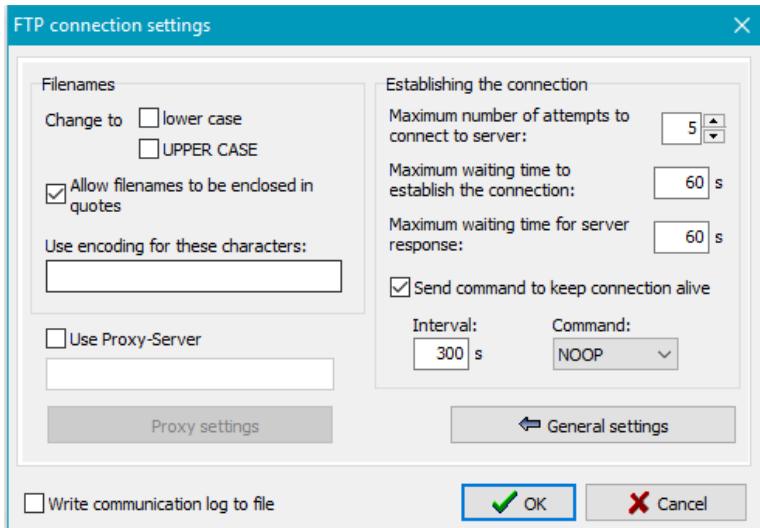
For a secure connection the option **Require** is recommended.

#### 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:

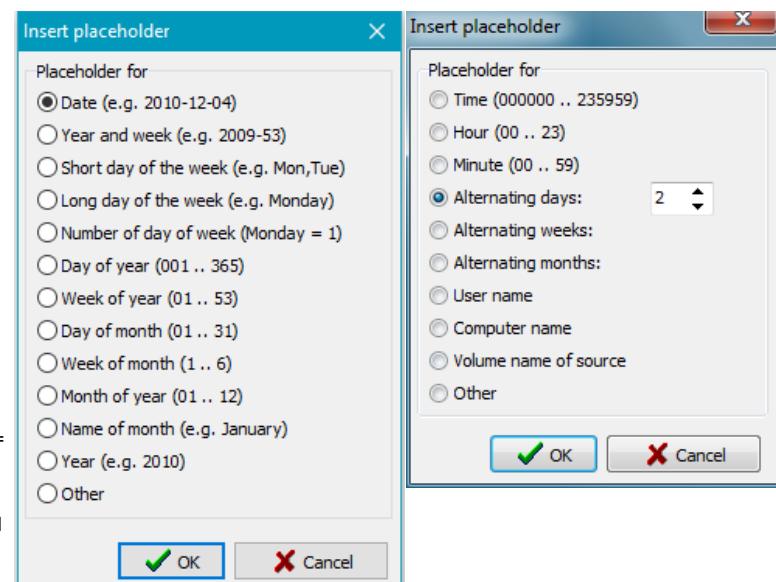
- **Maximum number of attempts:** Specify the maximum number of attempts to connect to the FTP server. If this fails, the backup will be canceled.
- **Maximum waiting time to establish the connection:** Specify the maximum time to wait for a reply from the FTP server after sending the connect command. If establishing the connection fails, further attempts will be made until the maximum number is reached (see above).
- **Maximum waiting time for server response:** Specify the maximum time to wait for a response from the FTP server after sending a command.
- **Send command to keep connection alive:** 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 selectable FTP command (NOOP, PWD or SYST) will be sent periodically at adjustable intervals to prevent this issue (default: 5 min = 300 s)

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

## Using placeholders

Clicking the button causes the dialog box (reproduced on the right) to appear, in which a placeholder in the format "%sss%" is added to the directory name, with "%sss%" being replaced with current values on backing up:

- **%date%** - date in the format "yyyy-mm-dd" (e.g. 2011-08-03)
- **%yaw%** - year and week in the format "'yyyy-ww" (e.g. 2011-31)
- **%dow%** - day of current week in the format "Mon, Tue, Wed, Thu, Fri, Sat, Sun"
- **%ldow%** - day of current week in the format "Monday, Tuesday, etc."
- **%dnw%** - day of current week as number (Monday = 1, ..., Sunday = 7)
- **%day%** - day of current year in the format "ddd" (e.g. 1 = January 1)
- **%week%** - week of year in the format "ww" (i.e. 01 .. 53)
- **%dom%** - day of current month in the format "dd" (i.e. 01 .. 31)
- **%wom%** - week of month in the format "w" (i.e. 1 .. 6)
- **%month%** - month of current year in the format "mm" (i.e. 01 .. 12)
- **%lmonth%** - name of the month in the format "January, February, etc."
- **%year%** - current year in the format "yyyy" (e.g. 2004)
- **%time%** - current time of day in the format "hhmmss" (e.g. 215325)
- **%hour%** - current hour in the format "hh" (e.g. 17)
- **%minute%** - current minute in the format "mm" (e.g. 43)



- **%d##n%** - n (=2..9) alternating days in the format "n" (e.g. %d##2% is replaced by 1 on odd days of the year, by 2 on even days)
  - **%w##n%** - n (=2..9) alternating weeks in the format "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 in the format "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)
  - **%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)

**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(HOMEPATH)%` or `%evar(TEMP)%`.

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

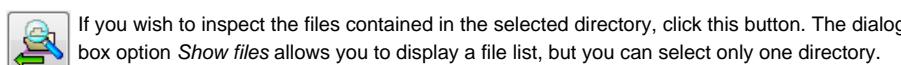
Hence another backup directory will be generated each day.

## 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.



## Add single files



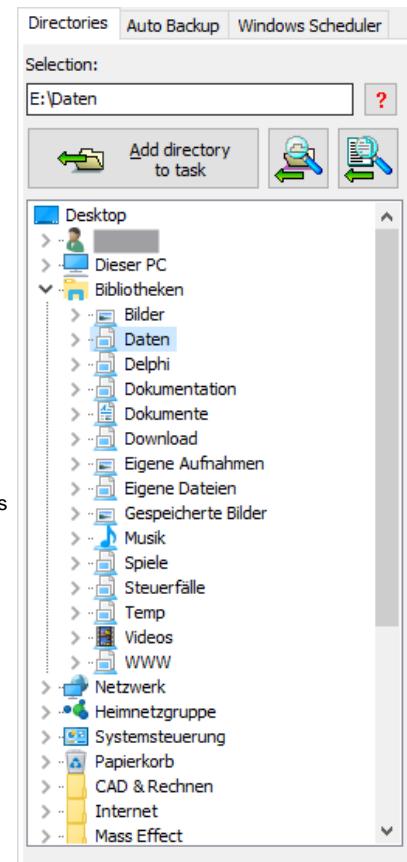
From version 5.8.5, you can directly select one or more files from a directory for backup.

From version 3.0.3, you can directly select one or more files from a directory for backup. Although this was possible with earlier versions, some manual adjustment of the required

Although this was possible with earlier versions, some manual adjustment of the required filters was necessary. The current version will perform this automatically. Clicking the button will open a dialog to select one or more files to be backed up. The directory containing these files will be added to the backup task, all subdirectories will be excluded from backup and the required file filters such that only the selected files will be backed up.

## Display of directories to be backed up

Directories to be backed up	Task settings	Other options	Log: Long
<input checked="" type="checkbox"/> E:\Butest\BuTest-1 (all) <input checked="" type="checkbox"/> C:\Users\Public (all) <input type="checkbox"/> C:\Users\Default\AppData [-2] (all) <input type="checkbox"/> E:\Delphi7\Bin (only A*) [E] <input type="checkbox"/> E:\Daten (all)			



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 tooltip.

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**:

- **(-n)**: There are *n* **subdirectories** excluded.
  - **(+n)**: There are *n* **subdirectories** selected.
  - **(all)**: No file filter has been specified.
  - **(only FF)**: A file filter *FF* (e.g. [AB]\*) has been specified to select certain files (See **Standard file filter**)
  - **(except FF)**: A file filter *FF* (e.g. [AB]\*) has been specified to exclude certain files (See **Standard file filter**)
  - **(from/to date)**: A **time slot** has been specified under the **Files** tab.
  - **(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.
  - **[IJ]**: A **type list** has been specified via the option "Only these" under the **Types** tab.
  - **[EI]**: 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.

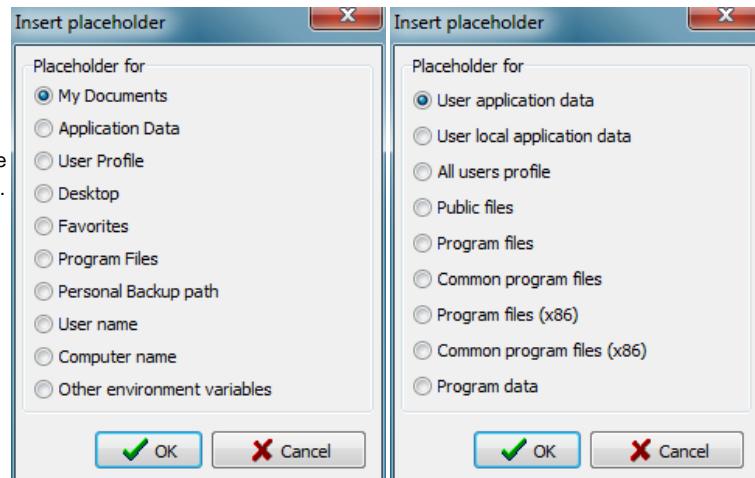
## Disabled entries

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 reenabled 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

 Clicking the left button will rearrange the directories to be backed up into an alphabetical order. Clicking one of the other buttons will move the selected entry one row up or down.



#### 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
- **%progsfiles%** - 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)
- **%progpath%** - 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/7/10

● <b>%appdata%</b>	C:\Users\<username>\AppData\Roaming
● <b>%localappdata%</b>	C:\Users\<username>\AppData\Local
● <b>%allusersprofile%</b>	C:\ProgramData
● <b>%public%</b>	C:\Users\Public
● <b>%programfiles%</b>	C:\Program Files
● <b>%commonprogramfiles%</b>	C:\Program Files\Common Files
● <b>%programfiles(x86)%</b> *	C:\Program Files (x86)
● <b>%commonprogramfiles(x86)%</b> *	C:\Program Files (x86)\Common Files
● <b>%programdata%</b>	C:\ProgramData

#### Windows XP

C:\Documents and Settings\<username>\Application Data
not available
C:\Documents and Settings\All Users
not available
C:\Program Files
C:\Program Files\Common Files
C:\Program Files (x86)
C:\Program Files\Common Files
not available

\* only available on 64-bit systems

#### Backing up data from removable volumes

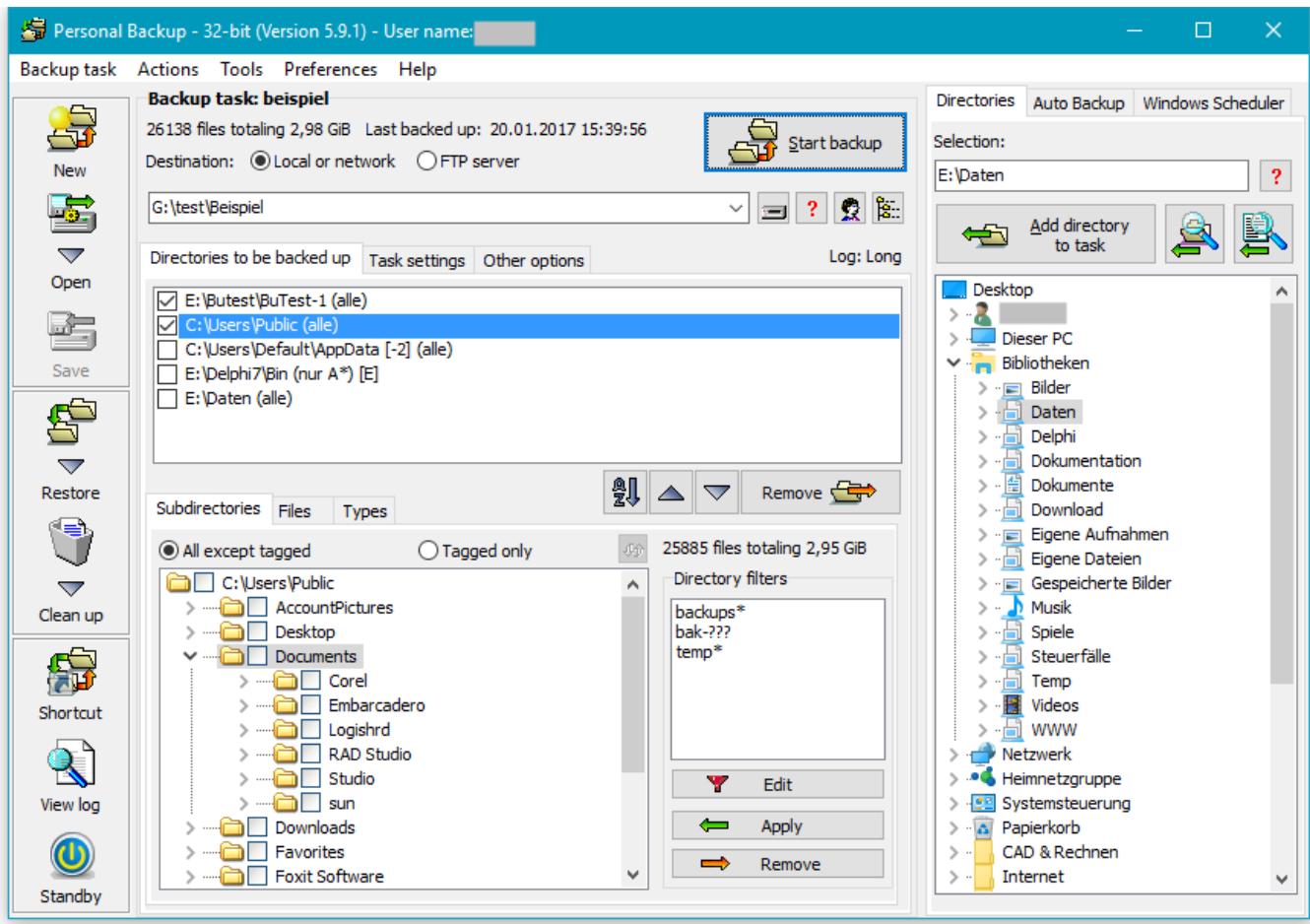
If you want to back up files from a removable drive (e.g. a USB stick) you cannot be certain that the same drive letter will always be assigned. In such a case, using file synchronization on backup may result in loss of data in the backup directory.

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\Datens-1\.) instead of using the drive letter (e.g. G:\Backup\DrvK\.) as applied for fixed drives ([see more](#)).

#### Desktop with fully-configured task



## 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.

## Status indicator

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

## 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.

## 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.

---

J. Rathlev, 24222 Schwentinental, Germany, August 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Opening and saving backup tasks



### 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 **main 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.

Backup tasks (*.buj)
Backup tasks (*.buj)
Restore tasks (*.rsj)
Cleanup tasks (*.cuj)
Verify tasks (*.vfj)
all (*)

### Insert a saved task (Import)

The directories of an existing task can be added to the list of directories of the currently-opened task.

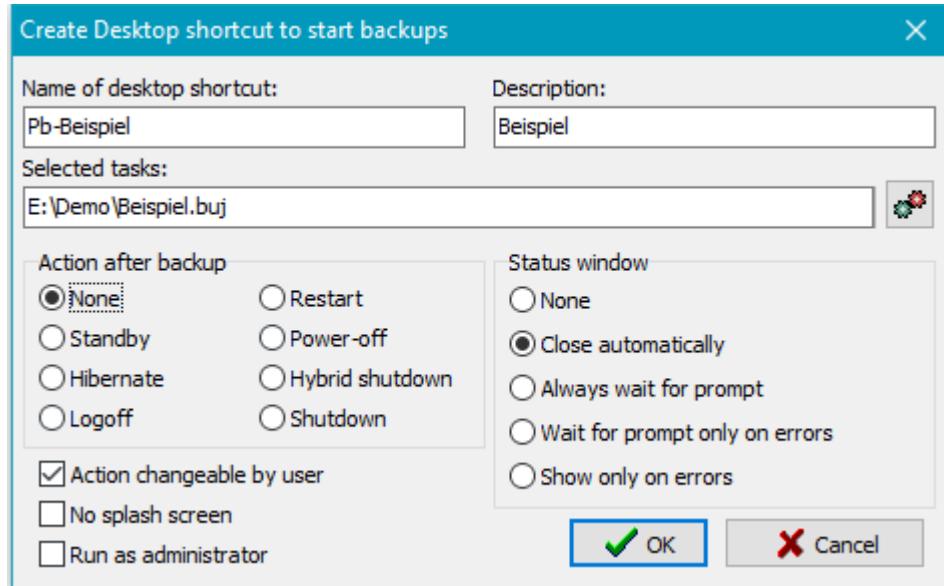
### Save a selected directory as a new task (Export)

The selected directory in the task list will be saved as new task.



### Creating a shortcut on the desktop

Clicking this button will open a dialog for creating a shortcut on the computer desktop for the currently-opened backup task. In this dialog, you can 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).

### 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](#)).

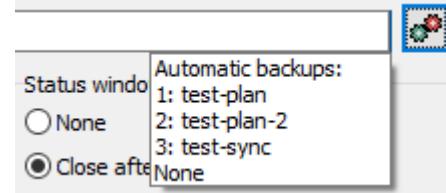
### Other options

- **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 an automatic backup

Click the small upper right button to display a list of all configured [automatic tasks](#). Select the task you want 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 is 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 **actions menu** to configure.



### 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.

---

J. Rathlev, 24222 Schwentinental, Germany, April 2018



## Selection options

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** 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** 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.

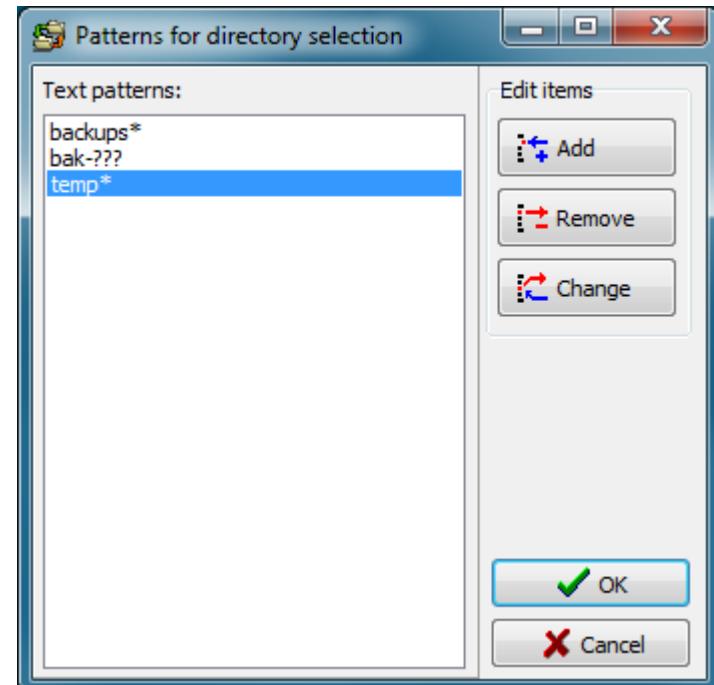
**Note:** If only a few subdirectories are to be backed up, it is usually better to add these directly as directories to be saved ([see more](#)) instead of selecting them as described above.

### 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]).

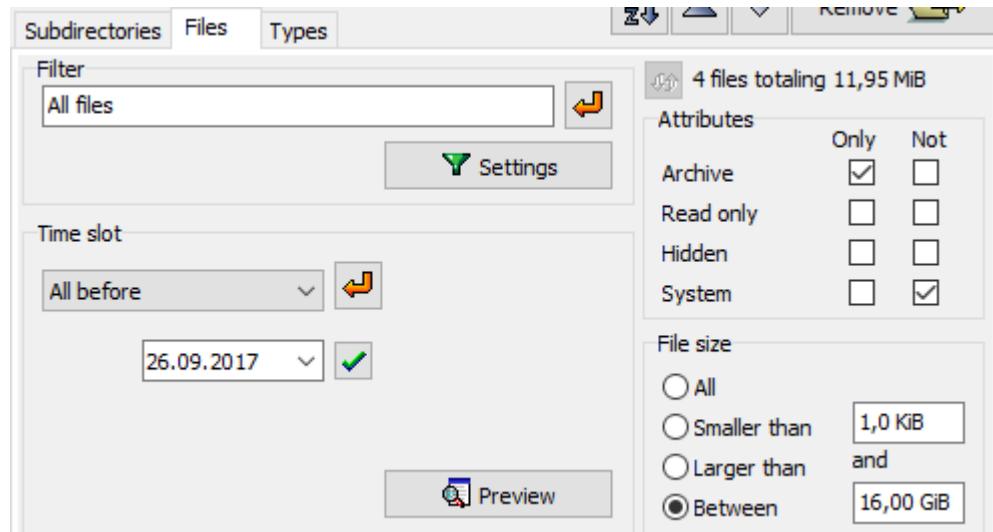
## Selection of files

### 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 date/time within certain limits. 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.

The following modification date/time selections are available:

All files

Only files that were created or modified before or after a given time

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

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

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

Only files that were created or modified within 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 suffixes (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.

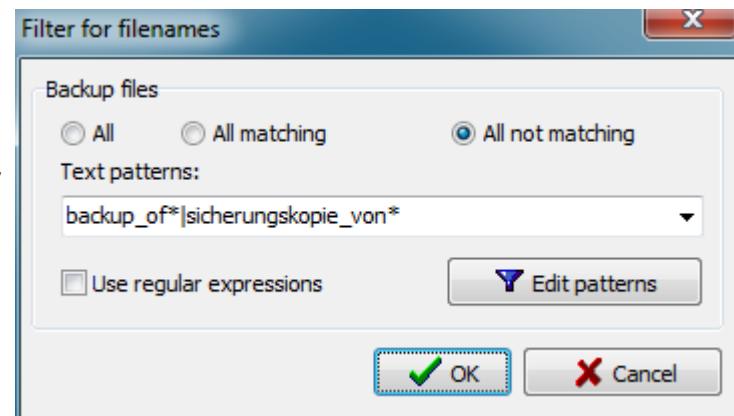
**Examples:** 1 kB = 1000 bytes, 1KiB = 1024 bytes, 16 MB = 16 000 000 bytes, 16 MiB = 16\*1024\*1024 bytes = 16 777 216 bytes.

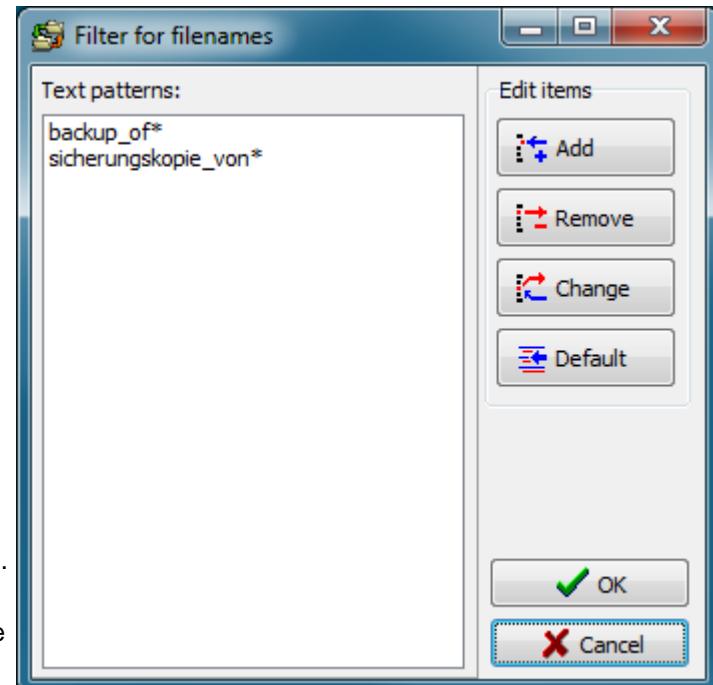
### Standard file filter (not using regular expressions)

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

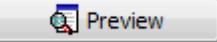
**?[ab]\*** - all names that have "a" or "b" as the second letter will match

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

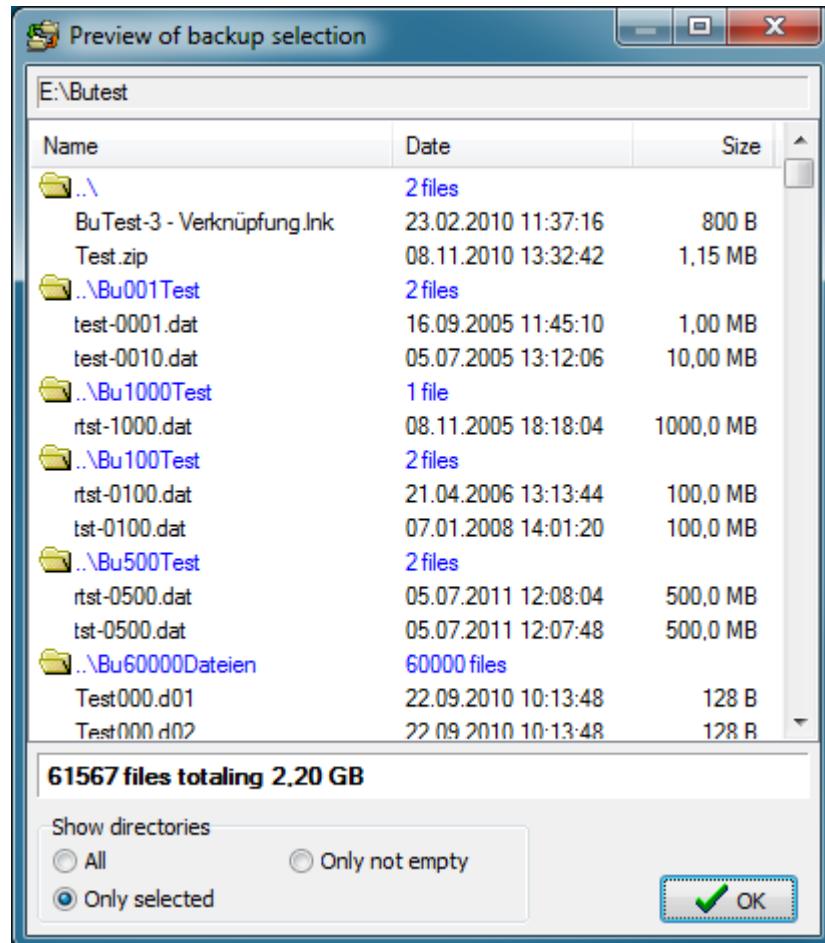
#### Filter using regular expressions

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  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).

Subdirectories			Files			Types		
<input checked="" type="radio"/> Only these			<input type="radio"/> All except					
Type	Count	↑ Size				↓ Type	Count	Size
PAS	1012	28,91 MB				~1~	0	0 B
DFM	190	2,77 MB				~2~	0	0 B
RES	103	1,95 MB				~3~	0	0 B
C	92	1,48 MB				~DSK	3	28,14 kB
OBJ	170	1,28 MB				~PAS	7	120,7 kB
BMP	194	1,02 MB				~PO	4	149,1 kB
RC	75	986,7 kB				2007	1	5,91 kB
H	74	928,7 kB				BAK	5	387,0 kB
DLL	3	873,0 kB				BDSGROUP	0	0 B
TNC	35	399,3 kB				RMK	0	0 B
2271 files totaling 42,31 MB						351 files totaling 47,59 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:

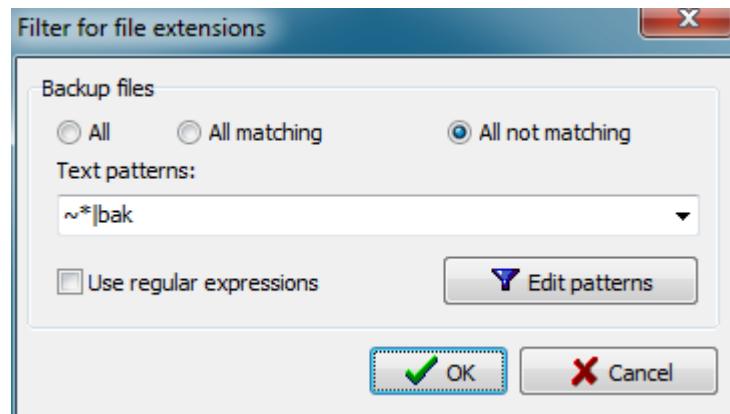
- By double-clicking on a single type
- By selecting several lines and clicking one of the **arrow buttons**
- Clicking one of the **double arrow buttons** will move all types to the other list

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

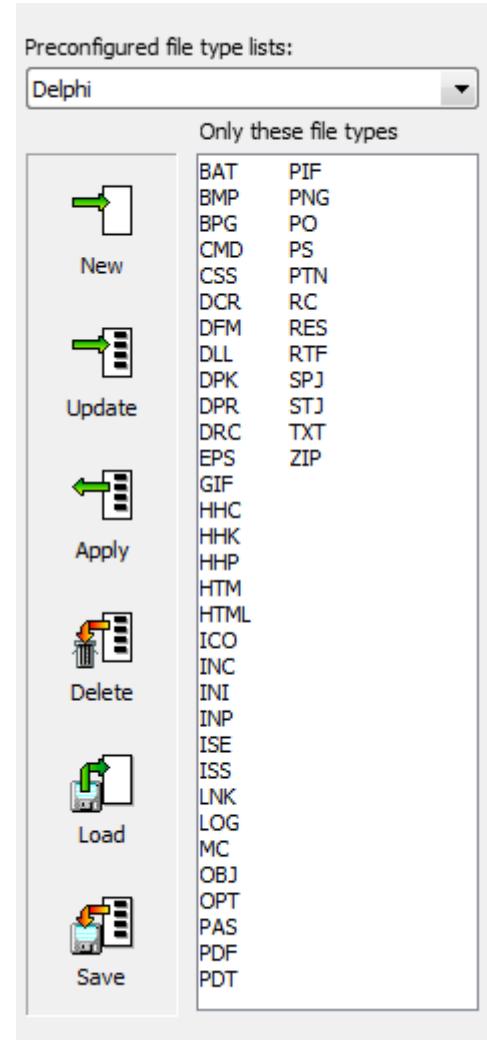
Delete the currently-displayed file type list.

#### Load

Load a type list from file.

#### Save

Save a type list to file.



---

*J. Rathlev, 24222 Schwentinental, Germany, August 2018*



# Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Task settings

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

- **Backup into separate files**
- **Backup modes for separate files** and use of archive bit
- **Backup into zip files**
- **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**

The screenshot shows the 'Task settings' tab selected in the top navigation bar. The interface is divided into several sections:

- Backup method:** Options include "Separate files" (selected), "Zip archive(s)", "Separate directories for drives (recommended)", "Original full directory structure", "Separated by root directory", and "One directory without full path".
- File processing:** Includes checkboxes for "Compress files" (checked) and "as zip" (checked). A list titled "No compression for these types:" lists file extensions: 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:** Includes dropdowns for "Update" and "Archive bit:" (unchecked), and a "Comparison settings" button.
- Miscellaneous:** Includes checkboxes for "Copy creation time" (checked), "Copy alternate data streams", "Copy document summary", "Copy file permissions", "Verify copied files", "Delete empty directories at destination" (checked), and "Delete source files after backup".
- Log:** A "Long" button is located in the top right corner.

## Backup into separate files

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

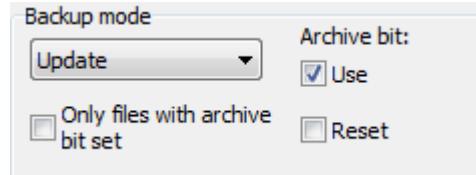
You can select four different backup modes:

- **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).

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

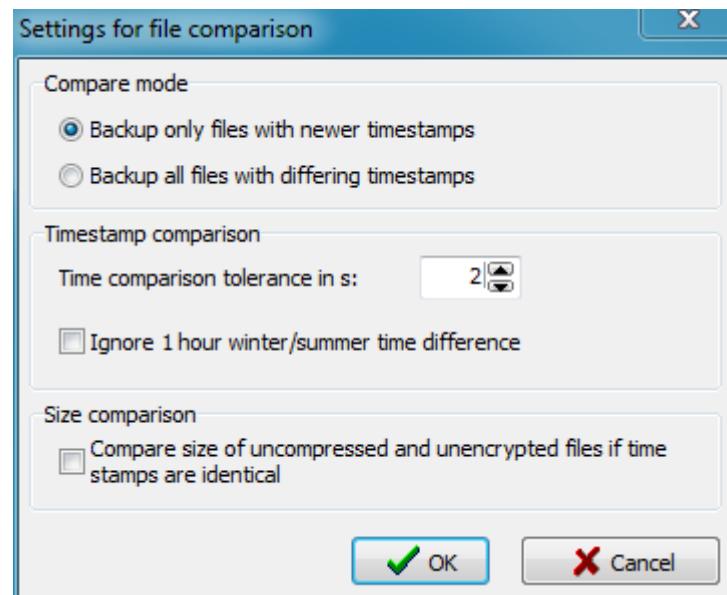
**Compare mode:** How the comparison of timestamps will be applied to the backup can be selected:

- **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.



**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

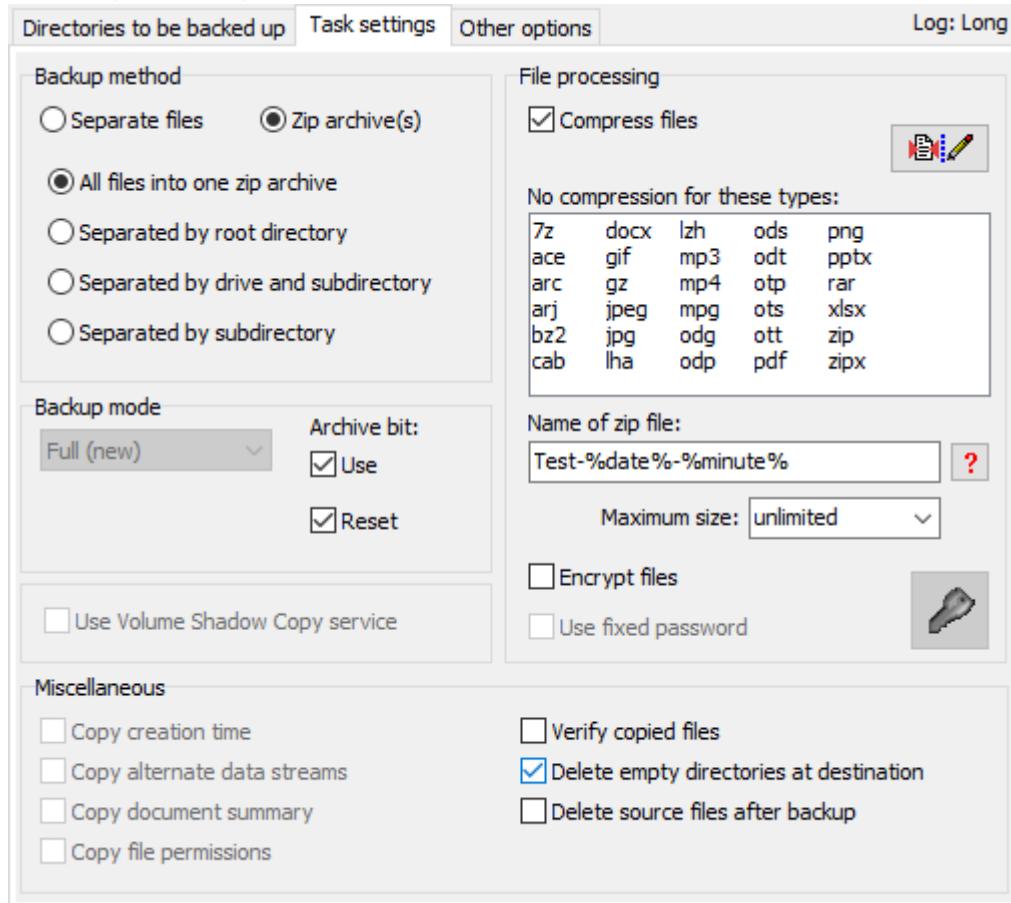
To be system-independent, a default tolerance of 2 s on time comparison is used by the program. If necessary this tolerance can be adjusted by the user.

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.

**Size comparison:** There are some programs that do not set the timestamp after a file, for example a JPEG image, is modified. In this case the file size can be used as additional criteria. This only works on files which are copied unencrypted and (for example .jpg, .png, etc.) uncompressed.

## Backup into zip files



### 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. 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	Dir1-2011-07-21.zip
E:\Data\Dir2	Dir2.zip	Dir2-2011-07-21.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](#))

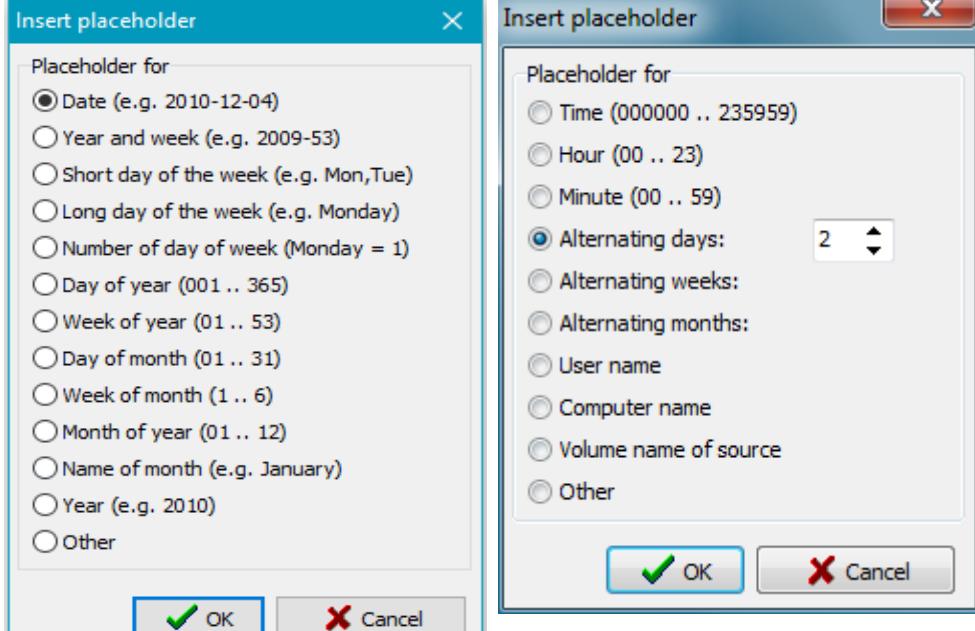
**Note:** Bear in mind that **zip files will always be created anew** at the start of each backup operation. An already-existing zip file with the same name will be overwritten. There is no comparison of timestamps in this mode (see above under *Update*).

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: to include these, click the  button:

- **%date%** - date in the format "yyyy-mm-dd" (e.g. 2011-08-03)
- **%yaw%** - year and week in the format ""yyyy-ww" (e.g. 2011-31)
- **%dow%** - day of week in the format "Mon, Tue, Wed, Thu, Fri, Sat, Sun"
- **%day%** - day of year in the format "ddd" (e.g. 1 = January 1)
- **%week%** - week of 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)
- **%year%** - year in the format "yyyy" (e.g. 2004)
- **%time%** - time of day in the format "hhmmss" (e.g. 215325)
- **%hour%** - current hour in the format "hh" (e.g. 17)
- **%minute%** - current minute in the format "mm" (e.g. 43)
- **%d#n%** - n (= 2..9) alternating days in the format "n" (e.g. %d#2% is replaced by 1 on odd days of the year, by 2 on even days)
- **%w#n%** - n (= 2..9) alternating weeks in the format "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 in the format "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 und by 3 in the months 3,6,9,12)
- **%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)



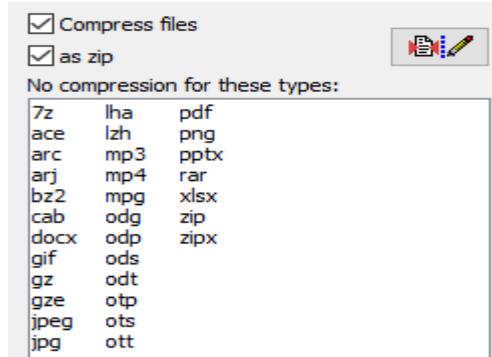
## Using the archive bit for backups into zip files

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.

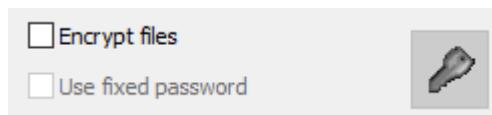
### Differences between backing up as zip or gz files:

- **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

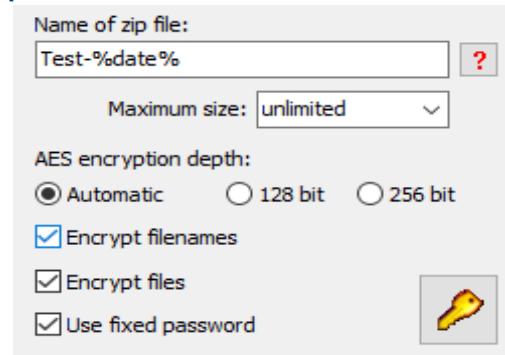
All files may be encrypted using the Advanced Encryption Standard (AES) method, the algorithms of which are known to be very secure ([more information](#)). You can use it on single files using a **proprietary file format** or on zip files with a **WinZip-compatible file format**.



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 password 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.

## 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 NTSF.
- 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 must be disabled 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 Schwentinental, Germany, July 2018



## Other options

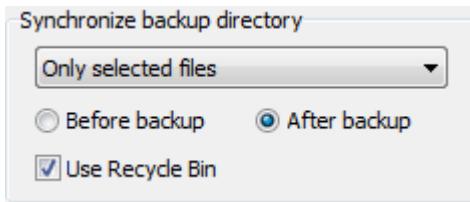
Click the **Task settings** tab to configure the advanced options for your backup task:

- **Synchronize** destination and source folders
- Send **mail** after backup
- Settings for **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**

The screenshot shows the 'Other options' tab selected in the top navigation bar. The interface is divided into several sections:

- Synchronize backup directory:** Set to "Off". Options include "Before backup" (radio button), "After backup" (radio button, selected), and "Use Recycle Bin" (checkbox).
- Security backup of old file versions:** Two checkboxes: "During backup" and "During synchronization", each with a "Settings" button.
- Mail settings:** A checkbox "Send mail after backup" with an "Edit" button.
- External programs:** Two checkboxes: "Before backup" and "After backup", each with a "Settings" button.
- Miscellaneous:** A sidebar with a list of options: Task description, Task security, Log file, **Log settings** (selected), Filename processing, Junction points, Copy settings, Copy time out, Copy priority, Transfer speed, Timestamp file, Skip directories, Scan directories, Power options, and Removable media.
- Settings for backup log:** Includes "Mode:" (radio buttons for Off, Short, Long, Verbose) and "Options:" (checkboxes for Show warnings in short log, Print automatically after backup, and Error summary).
- Buttons:** "Apply changes" button at the bottom right.

## 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 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. Files from this selection that no longer exist at source will be deleted, **all other will remain untouched**.

#### Selected files, delete other

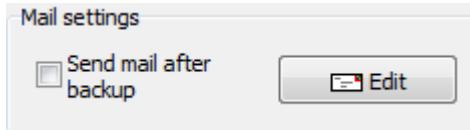
Only the files and directories that were selected for backup (see [selection of subdirectories, files and types](#)) will be synchronized. Files from this selection that no longer exist at source will be deleted, **all other will also be deleted**.

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.

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:

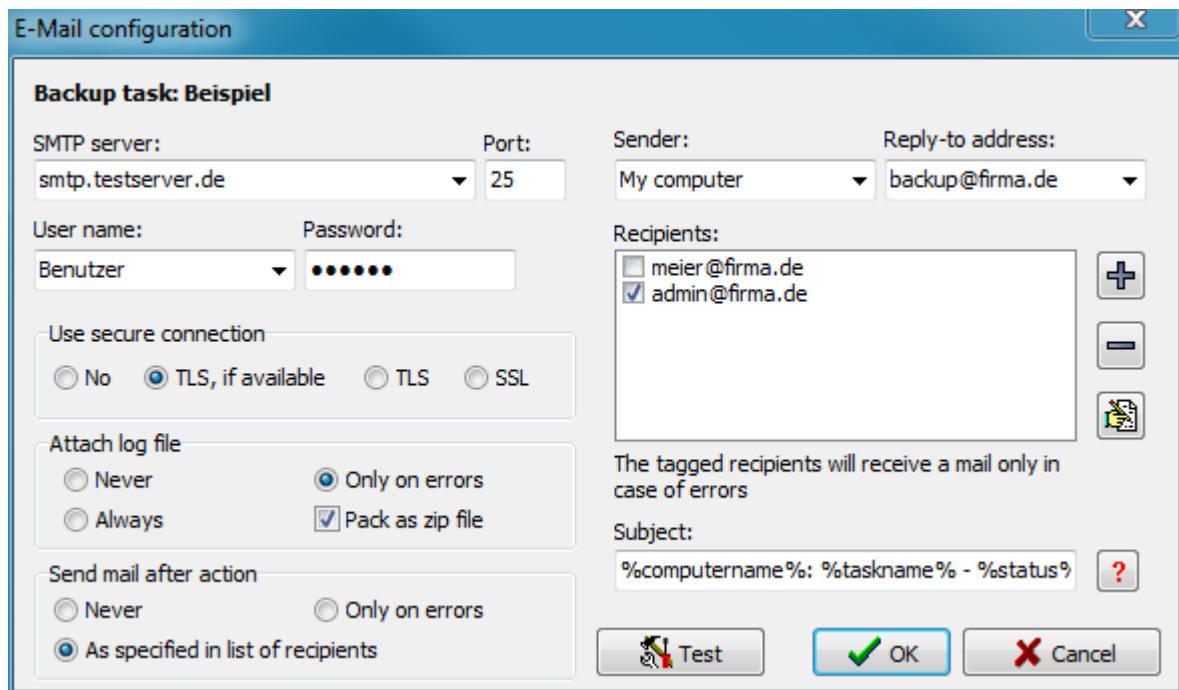
- **Use Recycle Bin:** During synchronization files will not be irrecoverably deleted but moved to the Windows Recycle Bin so that you can recover them if needed. This option is only available if the destination is on a local fixed drive. Notice that this function is only available for files with paths 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

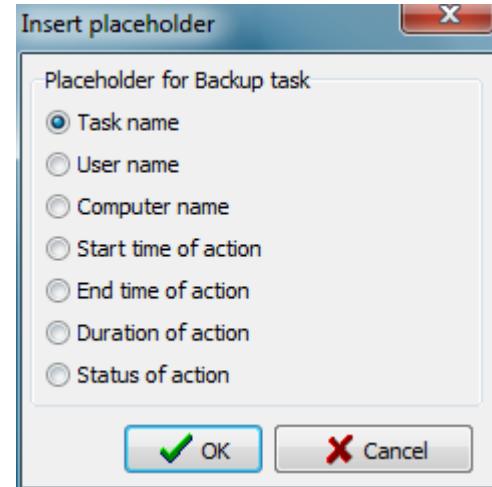


For monitoring the backup process on a remote computer, the administrator can arrange for a report to be sent by mail. The backup log can be attached (optionally as a zip file). If errors occurred during backup, the mail priority will be set to *high* (*normal* otherwise).

#### 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.
- **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 ***PbSmtp.log*** located in the same directory as the other log files ([see here](#)).

## Security copies

Security backup of old file versions

<input checked="" type="checkbox"/> During backup	
<input checked="" type="checkbox"/> During synchronization	

### 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.
- **Move to subdirectory:** In each directory a new

Security copies during backups

Location for older file versions	Maximum age of older versions
<input checked="" type="radio"/> Leave in original directory	<input type="button"/> 8 weeks
<input type="radio"/> Move to subdirectory	
<input type="radio"/> Move to separate directory	
<input type="radio"/> Move to subdirectory in root	
Rename older file versions	Set to 0 to retain all older versions
Filename suffix: bak	<input type="button"/> <input type="button"/> <input type="button"/>
History copies	Maximum number: <input type="button"/> 20 <input type="button"/> Minimum number: <input type="button"/> 5 <input type="button"/>
For automatic history copies no placeholders are allowed, use a fixed suffix.	

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 renamed security copies (see above).

**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<sup>\*</sup>:** <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<sup>\*</sup>:** (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<sup>\*</sup>:** <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<sup>\*</sup>:** <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.

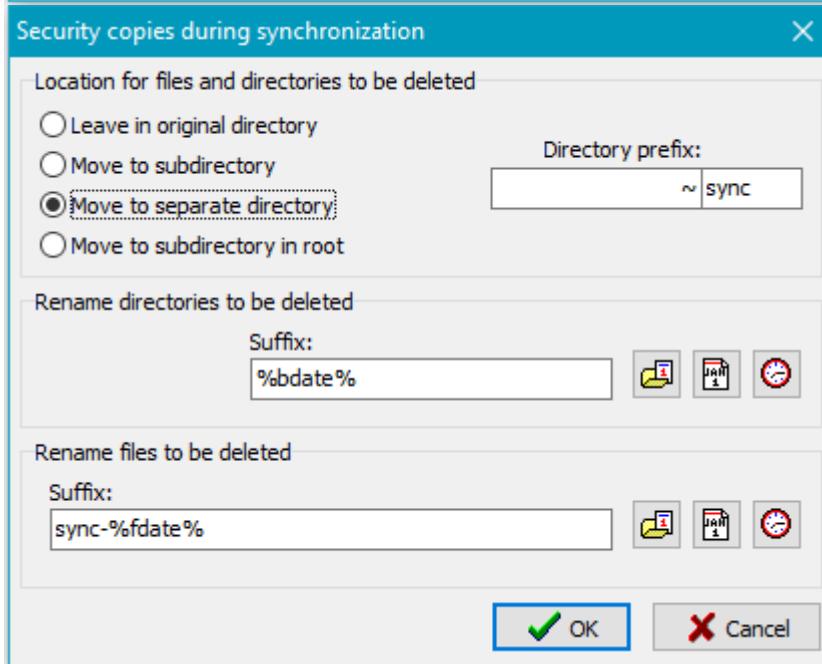
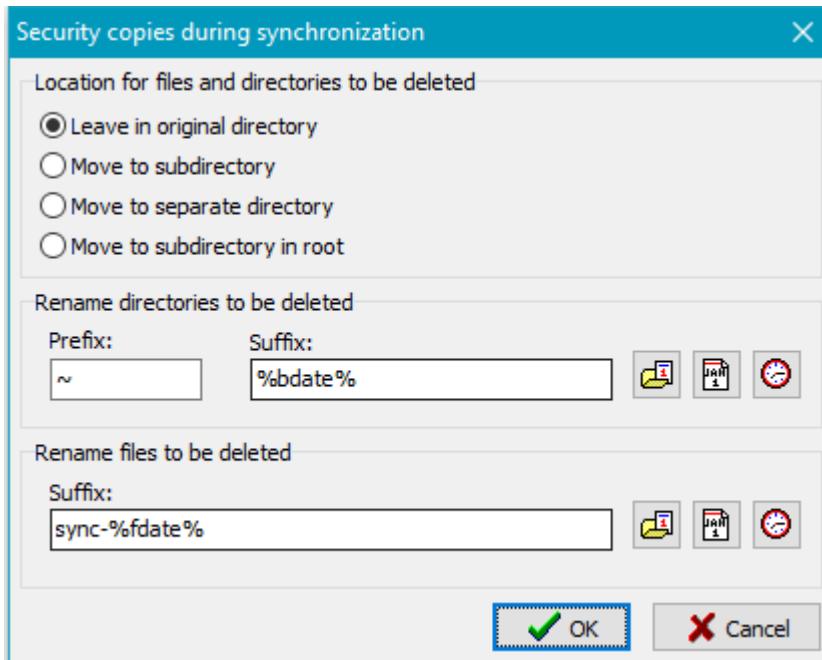
- **A certain number of previous versions:** <filename>.bak-1.<ext>[.gz].enc], <filename>.bak-2.<ext>[.gz].enc], ...

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.



## 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)

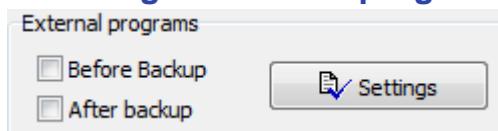
The suffix may remain blank, may have a fixed value or may additionally contain placeholders for the timestamp of the directory (not available with FTP), the backup date and/or the backup time (refer to **Security copies at Backup**).

#### 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

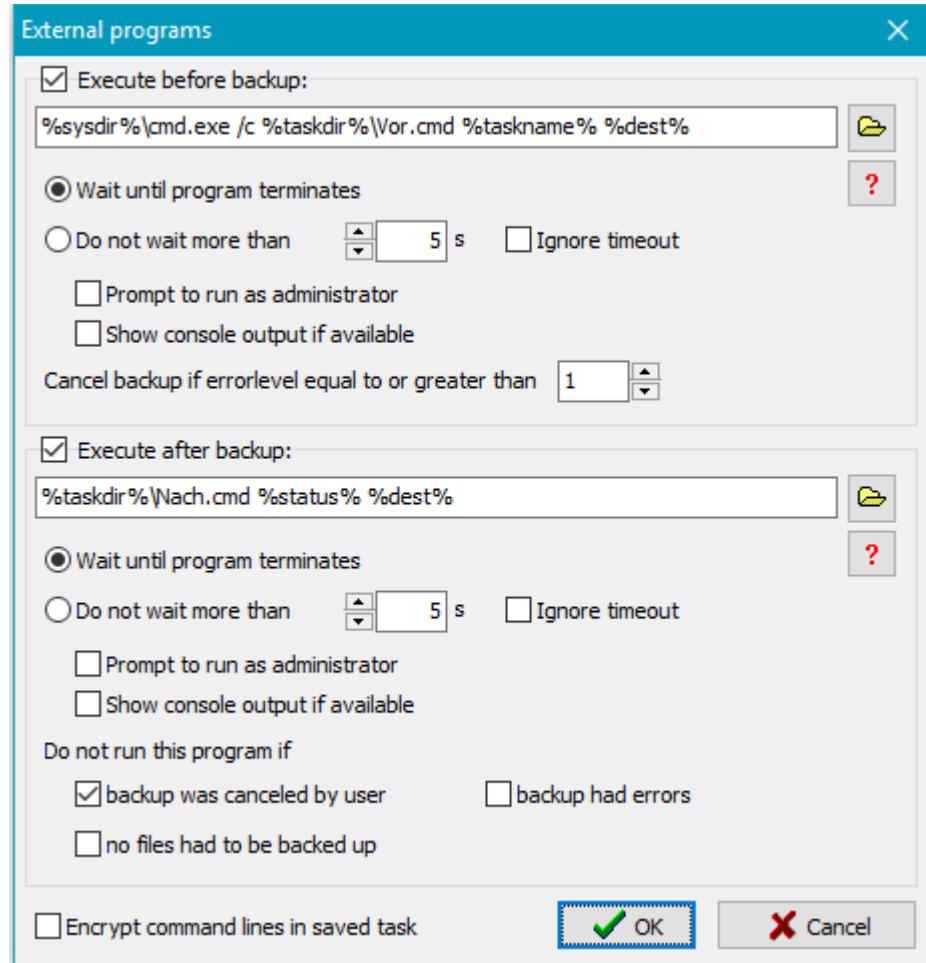


An external program, a batch file or a script can be executed before and/or after each backup. This facility makes it possible during a backup to stop a currently-running service or program that locks its files against access by other applications and then to restart this afterwards (see this **sample 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.

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**
- **%progpath%:** 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** that are allowed for destination directories (e.g. %date%) or any 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.
- **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 of 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.

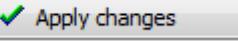
**Note:** If you want to insert a pause after starting an external application, for example to wait for an external drive to start up, you will need to use a small batch script to call the program **Wait** from the program **utility package**.

**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 the 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 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

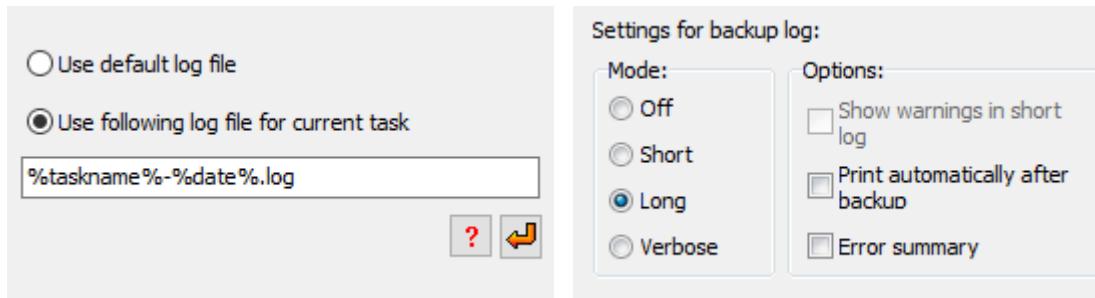
<p>Description for backup task:</p> <div style="border: 1px solid #ccc; padding: 5px; height: 150px; overflow-y: auto;"> Test Backup </div>	<p>Protect the task file from overwriting by unauthorized users</p> <p>Password:</p> <input style="width: 100%; height: 20px; margin-bottom: 5px;" type="password"/> <p>Confirm password:</p> <input style="width: 100%; height: 20px;" type="password"/>
---	---

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.

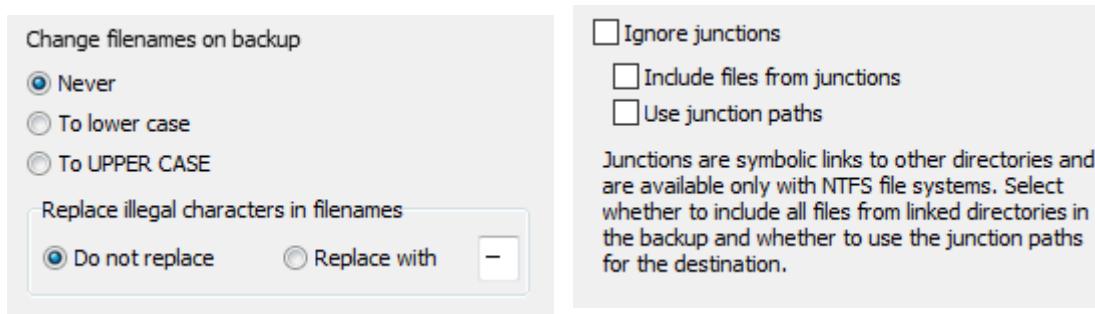
- **Use default log file:** the log will be written to the default log file used for all tasks ([see ..](#))
- **Use following log file for current task:** you can specify any fixed filename and you may specify a name containing placeholders. On clicking the button with a red arrow, a placeholder for 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 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.

**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\PersBackup5** 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 ([see more](#) ).

## 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:

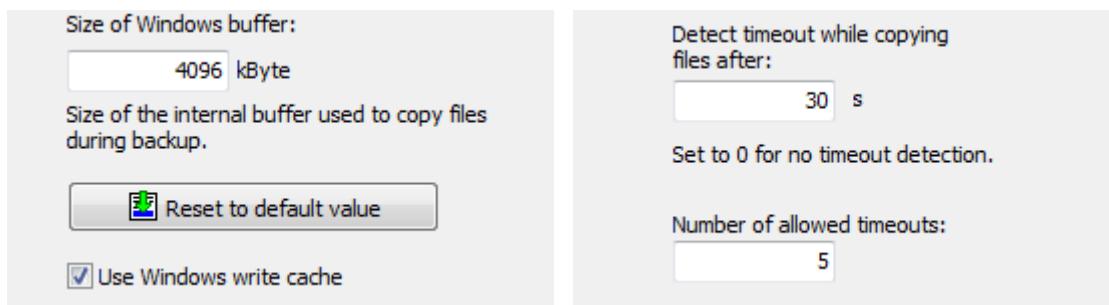
- If **Ignore junctions** is selected, all junctions found during backup will be skipped and no information about is

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 kB. 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 kB for Windows and 256 kb 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.

## 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 decelerate 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

By default a timestamp file in the destination directory will only be created at alternating schedules.

Create timestamp file in destination directory at all backup modes

Check this option to avoid that the user will be prompted to insert a medium or establish a network connection if the drive with the directory to be backed up is unavailable.

Skip directories on unavailable drives

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 because it is needed for internal purposes.

## Skip 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

Check this option if you want to scan all directories every time before starting the backup. This will count the files and recalculate the volume to be backed up to ensure a reliable total progress bar.

Scan directories before backup

By default, the program will prevent the computer from going into idle mode and the display to be switched off during backup operations.

Allow to switch off the display during backup

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

Check this option if you do not wish the drive letters of source directories on removable media to be replaced by the associated volume names.

Do not use volume names for source directories

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.

---

*J. Rathlev, 24222 Schwentinental, Germany, March 2018*



## 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 *TRegExpr*.

The syntax of regular expressions is described by the author of the libraries used (**Andrey V. Sorokin**) at **RegExp Studio**. Below is an *offline adaption* of this description corrected for proofreading errors:

### Introduction

Regular expressions are a widely-used method of specifying patterns of text for which to search. Special **metacharacters** 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 **metacharacter** 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 **metacharacters** or **escape sequences** to be interpreted literally by preceding them with the backslash \ escape character. For example, the metacharacter ^ 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
\xnn	Character with hex code nn	\xnn
\x{nnnn}	Character with hex code nnnn (one byte for plain text and two bytes for Unicode)	
\t	Tabulator (HT/TAB)	\x09
\n	Line feed (LF)	\x0a
\r	Carriage return (CR)	\x0d
\f	Form feed (FF)	\x0c
\a	Alarm (bell) (BEL)	\x07
\e	Escape (ESC)	\x1b

#### 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- \xD ]     *matches any of #10, #11, #12, #13*

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

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

## Metacharacters

Metacharacters are special characters which are the essence of regular expressions. There are different types of metacharacters, as described below.

### Metacharacters - 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*

^\\$     *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 ^ metacharacter is only guaranteed to match at the beginning of the input string or text, the \$ metacharacter 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 ^ metacharacter 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 . metacharacter matches any character, but if you switch off the **modifier /s**, then the . metacharacter will not match embedded line separators.

TRegExpr works with line separators as recommended at [www.unicode.org](http://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.

Multiline 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!

## Metacharacters - 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 [ \t\n\r\f])

\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.

## Metacharacters - 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.

## Metacharacters - iterators

Any item of a regular expression may be followed by another type of metacharacters, the **iterator**. Using these metacharacters you can specify a number of occurrences of a previous character, of a **metacharacter** or of a **subexpression**.

### Code Description

\* Zero or more ("greedy"), similar to {0,}

+ One or more ("greedy"), similar to {1,}

? Zero or one ("greedy"), similar to {0,1}

{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:

<code>foob.*r</code>	<i>matches strings such as <b>foobar</b>, <b>foobalkjdflikj9r</b> and <b>foobr</b></i>
<code>foob.+r</code>	<i>matches strings such as <b>foobar</b>, <b>foobalkjdflikj9r</b> but not <b>foobr</b></i>
<code>foob.?r</code>	<i>matches strings such as <b>foobar</b>, <b>foobbr</b> and <b>foobr</b> but not <b>foobalkj9r</b></i>
<code>fooba{2}r</code>	<i>matches the string <b>foobaar</b></i>
<code>fooba{2,}r</code>	<i>matches strings such as <b>foobaar</b>, <b>foobaaar</b>, <b>foobaaaar</b> etc.</i>
<code>fooba{2,3}r</code>	<i>matches strings such as <b>foobaar</b>, or <b>foobaaar</b> but not <b>foobaaaar</b></i>

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 **abbbb**:

**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](#).

#### Metacharacters - 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:

<code>foo(bar foo)</code>	<i>matches the strings <b>foobar</b> or <b>foofoo</b></i>
---------------------------	---

#### Metacharacters - subexpressions

The bracketing construct ( ... ) may also be used to define regular expressions subexpressions. After parsing you can find subexpression positions, lengths and actual values in MatchPos, MatchLen and [Match](#) properties of **TRegExpr**, and substitute these in template strings using **TRegExpr.Substitute**.

Subexpressions are numbered based on the left to right order of their opening parenthesis.

The first subexpression 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:

<code>(foobar){8,10}</code>	<i>matches strings which contain 8, 9 or 10 instances of the <b>foobar</b></i>
<code>foob([0-9] a+)r</code>	<i>matches <b>foob0r</b>, <b>foob1r</b>, <b>foobar</b>, <b>foobaar</b>, <b>foobaaaar</b> etc.</i>

## Metacharacters - backreferences

**Metacharacters** \1 through \9 are interpreted as backreferences; \<n> matches the previously-matched subexpression #<n>.

### Examples:

( . )\1+	matches <b>aaaa</b> and <b>cc</b>
( .+ )\1+	also matches <b>abab</b> and <b>123123</b>
( [ ' " ]? ) (\d+)\1	matches " <b>13</b> " (in double quotes), ' <b>4</b> ' (in single quotes), or <b>77</b> (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 **/x**, 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 **а-я** includes ё, **А-Я** includes Є and **А-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 " (= 0xA8) and **à-ß** (= 0xC0..0xFF) includes all Russian symbols.

In contrast to the original version of *TRegExpr*, in Personal Backup this modifator 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 metacharacter 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:

(?i)Saint-Petersburg	matches <b>Saint-petersburg</b> and <b>Saint-Petersburg</b>
----------------------	---

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

## 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 Schwentinental, Germany, January 2018*



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev

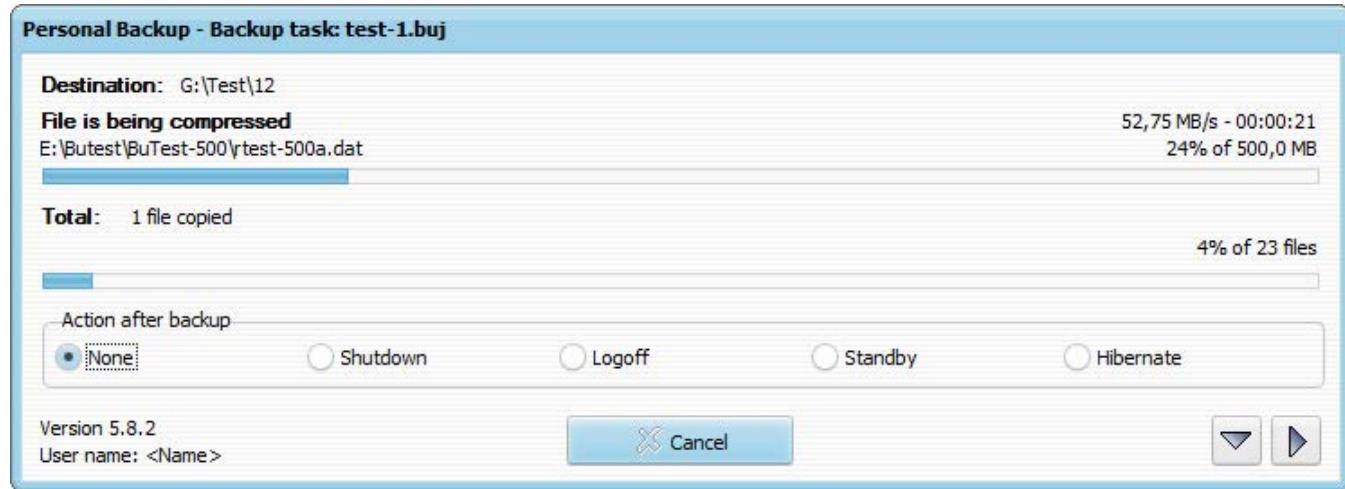
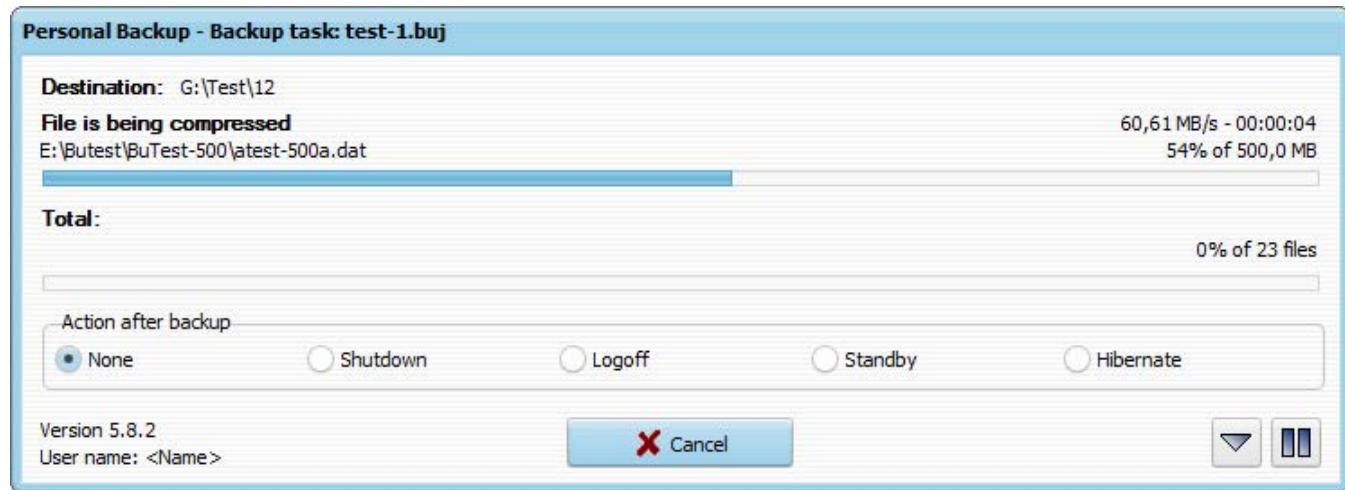


### Start backup immediately

After clicking the button, the **currently-opened 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.



**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.

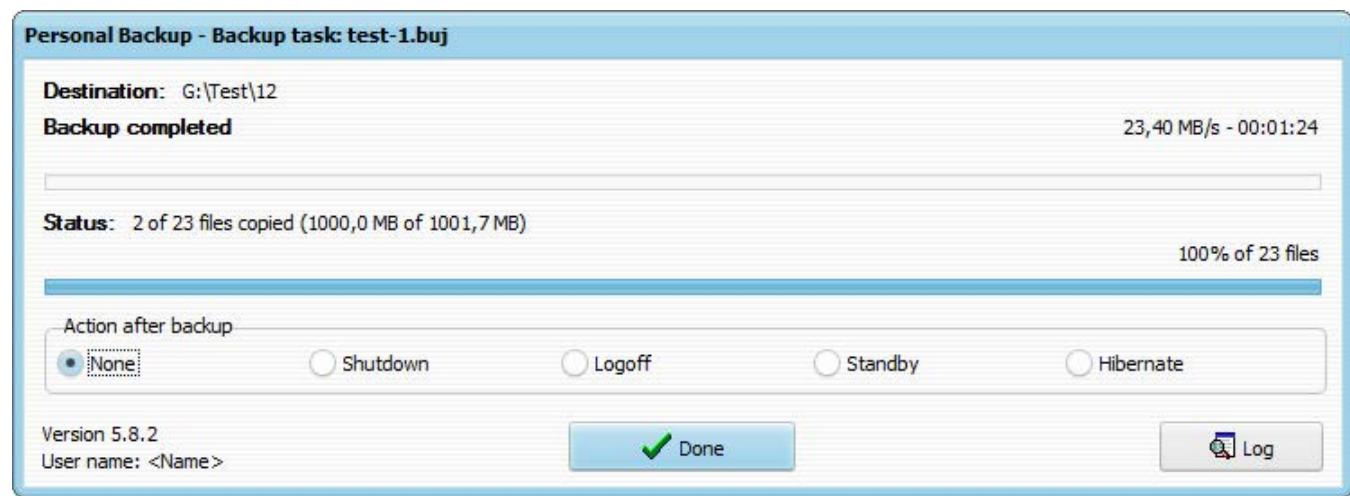
**Action after backup:** When starting a backup **manually** or via the **command line**, you can arrange beforehand for a subsequent action to take place: **Shutdown**, **Logoff**, **Standby** or **Hibernate**. This is very useful when a backup will take a long time to complete and you cannot wait for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



J. Rathlev, 24222 Schwerin, Germany, January 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



### 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 main 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 presettings will be used for each new backup task. An **individual adjustment for each task** can be made in the **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 verbose mode will contain a great deal of additional information (e.g. about system errors) and can be used for debugging purposes.

Settings for backup log:	
<b>Mode:</b>	<b>Options:</b>
<input type="radio"/> Off	<input type="checkbox"/> Show warnings in short log
<input type="radio"/> Short	<input type="checkbox"/> Print automatically after backup
<input checked="" type="radio"/> Long	<input type="checkbox"/> Error summary
<input type="radio"/> Verbose	

Unless specified otherwise in the **task options**, the log file will always be found as *PersBackup.log* in the user directory *Application Data\PersBackup* ([see here](#)). 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](#)).

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 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)

#### Options

- **Warnings** are generated when the backup copy succeeded but changing the attributes and/or timestamp failed at 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.

### 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 (Version 5.1.1) [C:\Users\rathlev\AppData\Roaming\PersBackup5\pb-51.log]

Open Print Search Up Down Up Redown Close

```

Copied: StartDlg.dfm
Copied: StartDlg.pas
Copied: SuffixDlg.dfm
Copied: SuffixDlg.pas
Status: : 65 files copied
==> End: 28.09.2011 09:43:22 - Backup task: test-1.buj (S)
Status: OK - 65 of 65 files copied (13,97 MB of 13,97 MB) -> 00:00:05

Personal Backup (Vers. 5.1.1.0) - Data backup
==> Start: 28.09.2011 09:45:01 - Backup task: test-1.buj (S)
### External program was successful: "E:\PersDat\PersBackup\Vor.cmd"
Destination volume: Arbeiten
Mode: Separate files - Separate directories for drives
Source: E:\BuTest\butest-1
Dest.: G:\Test\2e\LwE\BuTest\butest-1
-> Synchronize
  Status: : No files deleted
-> Data backup
  Copied: #Ordner 2\CheckDir.res.res
  Copied: AOrdner\ResOptionDlg.dfm
  Copied: AOrdner\WREDFRM.dfm
  Copied: BOrdner\TestÄ-10 .html
  Copied: Backup.pas
  Copied: Backup.res
  Copied: index.html
  Copied: PreviewDlg.dfm
  Copied: StartDlg.dfm
  Status: : 9 files copied
==> End: 28.09.2011 09:45:02 - Backup task: test-1.buj (S)
Status: OK - 9 of 65 files copied (293,8 kB of 13,97 MB) -> 00:00:00

```

Line: 13956 of 13956

### 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 (Vers. 5.9.0.0) [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

```

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 Schwentinental, Germany, February 2018*



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Automatic backup

- Overview
- Icon in notification area
- Selecting a backup task
- Defining the start time
- Status window
- Alternating backups
- Other settings

### Overview

Click the **Auto Backup** tab to display the selections for automatic backup. You can start 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 on the right will lead to help specific for that region:

### Show icon in notification area

If at least one of the automatic 16 tasks (time controlled or at logoff) is activated, this box will be checked and the **Personal Backup** will not be terminated when closing the main window, but will continue running in the background. The 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.

In addition 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.

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.

### Selecting a backup task

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

Beneath are three buttons with the following functions:



**Add current loaded task** for automatic execution: the task shown in the large center window will replace the selected automatic task. A new task must be created beforehand and saved to disk as file.



**Load task** for automatic execution: select and open the desired task using Windows Explorer.

The screenshot shows the 'Auto Backup' tab of the Personal Backup software. At the top, there's a checkbox labeled 'Show icon in notification area' which is checked. Below it is a grid of 16 numbered buttons (1-16) for selecting backup tasks. Button 7 is highlighted. To the right of the grid, under '7th automatic backup', is a text input field containing 'test-plan'. Below this are three buttons: a green plus sign for adding a task, a blue plus sign for loading a task, and a red minus sign for deleting a task. Further down, there's a dropdown menu set to 'Daily at selected time' and a time selector set to '16:00'. Another dropdown for 'on these days of the week' is set to 'Mo,Tu,We,Th,Fr'. Under 'Alternating schedule', it says 'Mode: As defined in task' and 'Daily - weekly change (4 weeks) Current step: 1st week'. A 'Settings' button is also present. At the bottom, there are sections for 'Status window' (set to 'Close automatically') and 'Backup priority' (set to 'Normal'), along with 'Last backup: None' and 'Log: Off'.



**Remove task:** the selected task will merely be removed from the list of automatic tasks, not deleted, so that its configuration can be used again later.



On clicking the button, all details of the task will be displayed in the center window and can be edited. If you have selected the option **Show automatic task instantly** in the **Preferences**, the task details will have been displayed immediately after selecting one of the task-number buttons.

## Start internal automatic backup

There are six different options for starting an automatic backup, together with the option to disable this:

### 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.

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.

## 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

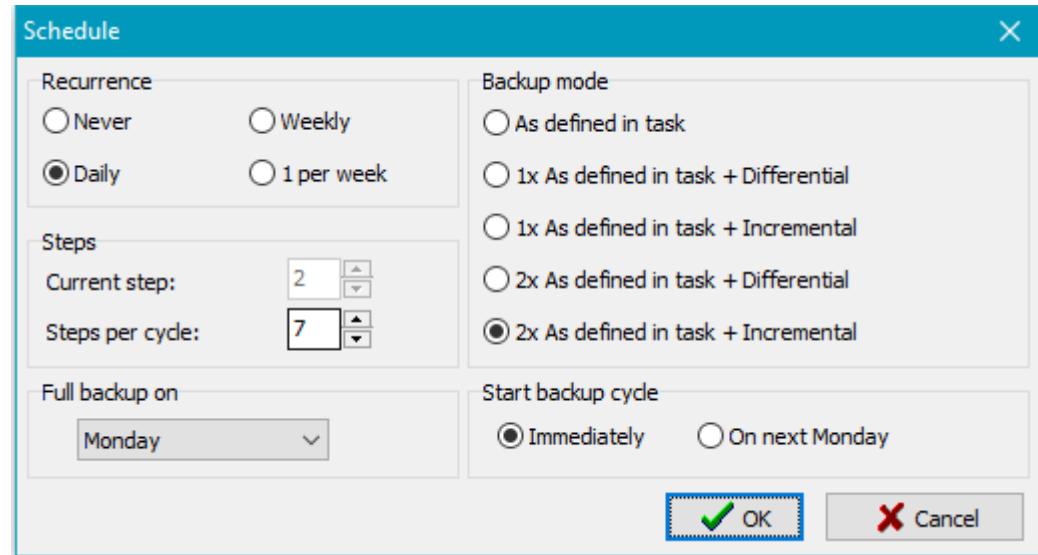
The progress windows will not be displayed (see above). The status window at the end of a backup will be opened only if errors have occurred. If the destination drive is not ready the user will not be prompted.

## 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.

### 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 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



Clicking this button will display the schedule of all pending automatic backups.

At the right of this button, you will find information concerning the currently-selected automatic backup task:

- The date and time last run
- The log settings

---

*J. Rathlev, 24222 Schwerin, Germany, April 2018*



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev

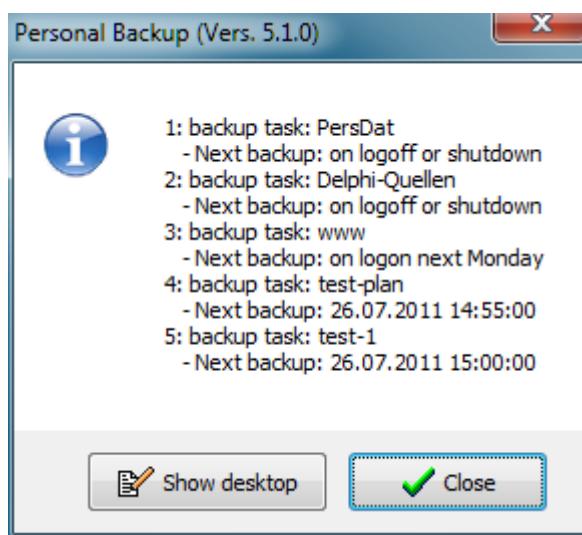


### Personal Backup in the Windows notification area

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 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* and select the option *Show icon and notifications*.

#### 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

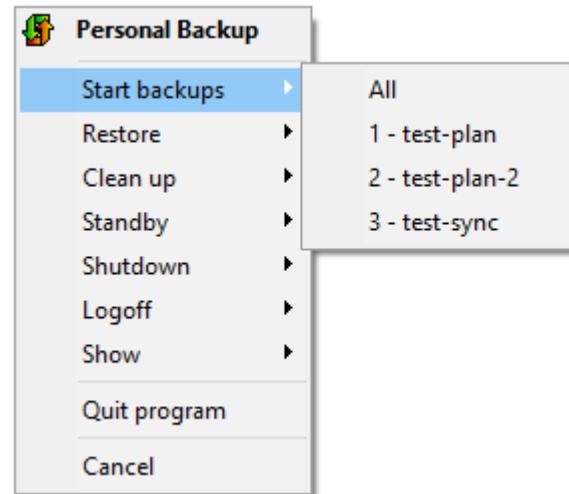
This will open a local menu to start several different actions. Clicking on **Personal Backup** will open the **program desktop window** to create or edit backup task and to start it manually,

Clicking on **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.

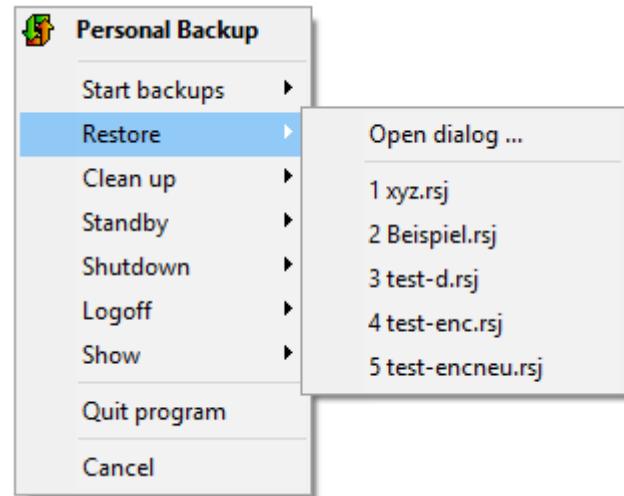
#### Start backups

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.



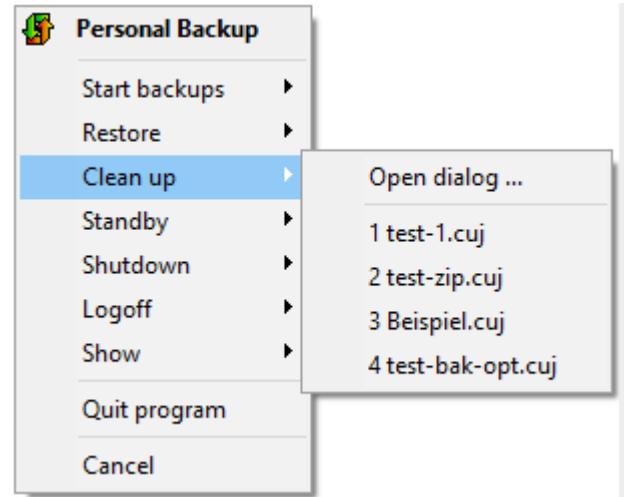
## Restore

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.



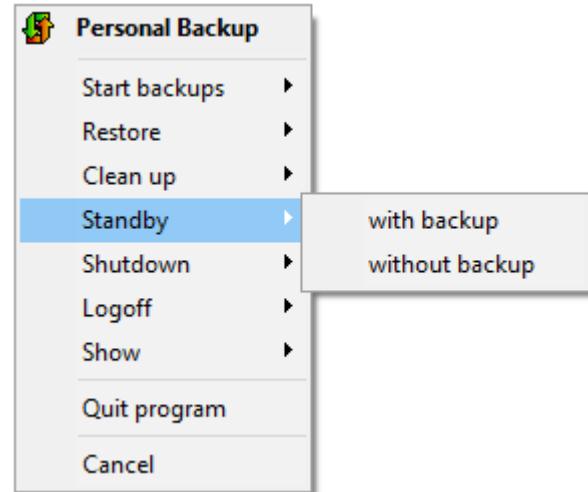
## Clean up

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*

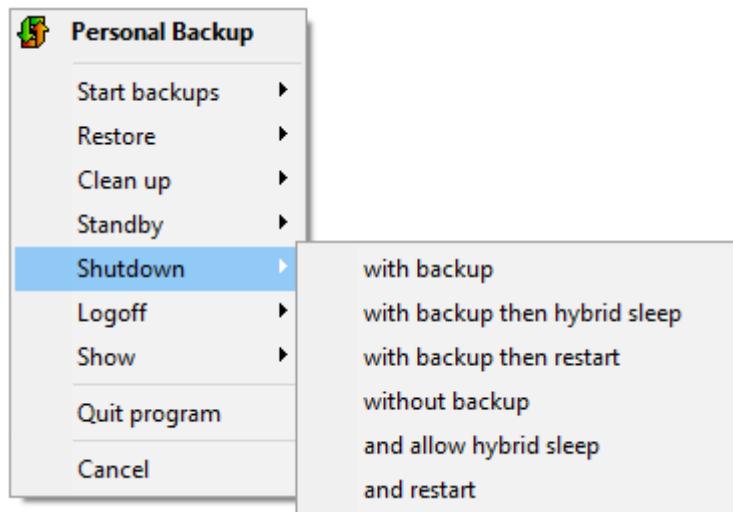
Shut down the computer without any backup.

### *and allow hybrid sleep*

Shut down the computer without any backup and put it into hybrid sleep.

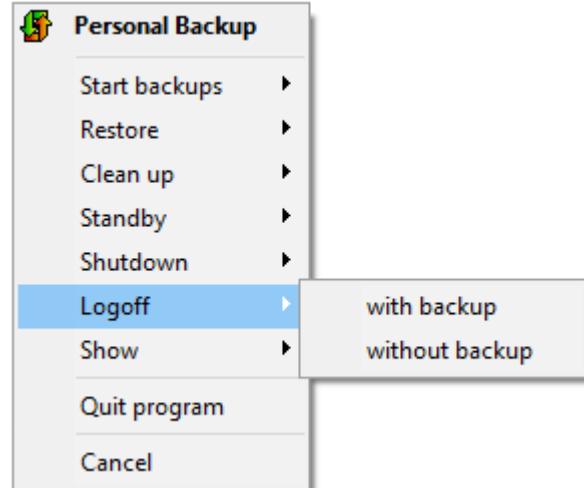
### *and restart*

Restart the computer without any backup.



## Logoff

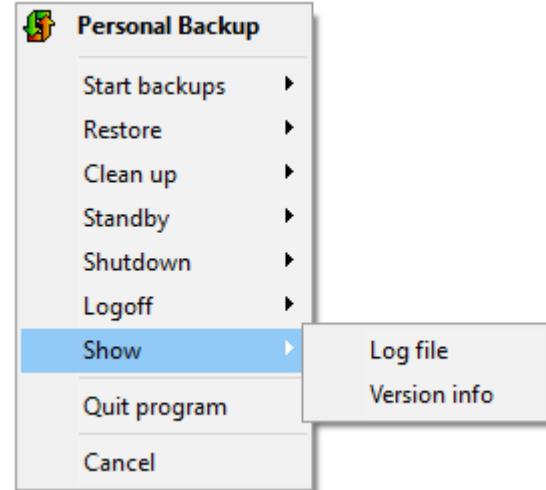
The user will be logged off. Optionally, you can select if the backup tasks designated for execution at logoff shall be performed before.



## Show

You can either open the program's **log window** or display with

Version info of the running program



---

J. Rathlev, 24222 Schwerin, Germany, January 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



### 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.

Select the **Windows Scheduler** tab at the top right of the program desktop. The resultant list (see screenshot on right) will show all Windows scheduled tasks using Personal Backup together with their next run times.

**Detailed information** for a selected task will be displayed beneath the listing.

#### Important note:

Personal Backup version 5.9 supports the extended features of the 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



New backup as scheduled task

Click this button to start the wizard.

Start Personal Backup task via Windows Task Scheduler:



New backup as scheduled task

Scheduled tasks that use Personal Backup:

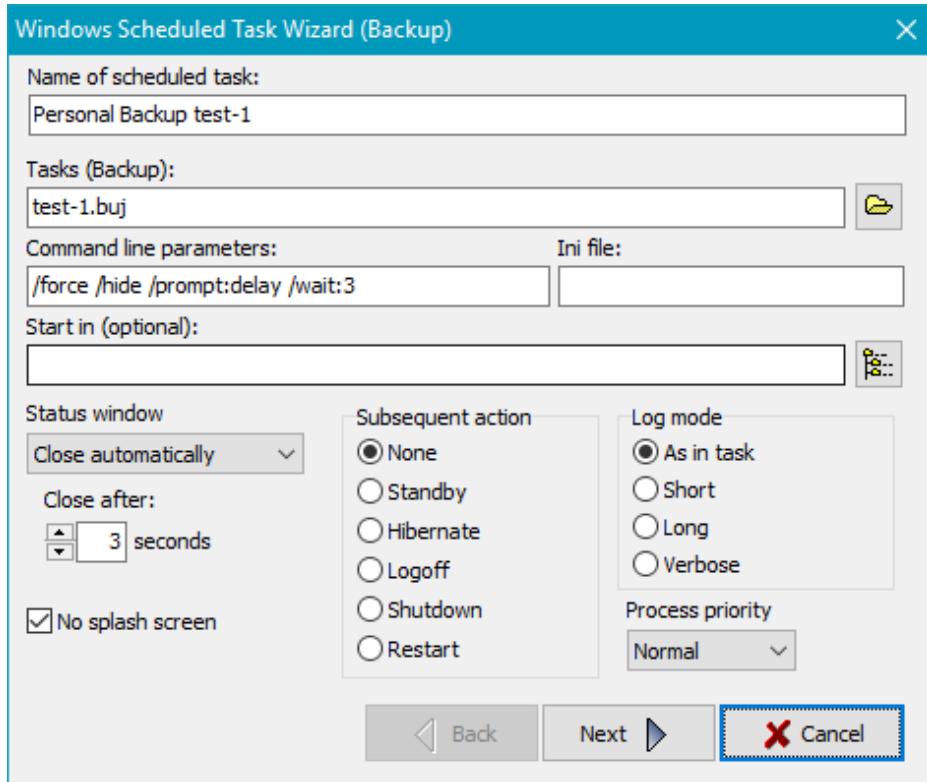
Name	Next run time
Personal Backup...	2011-08-15 14...
Personal Backup...	2011-08-17 12...
Personal Backup...	2011-08-15 16...
Personal Backup...	2011-08-15 15...

Triggers for Personal Backup Cleanup-test-1.job

1: Um 14:50 täglich, ab dem 29.03.2011



Edit scheduled backup 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.

#### **Log mode**

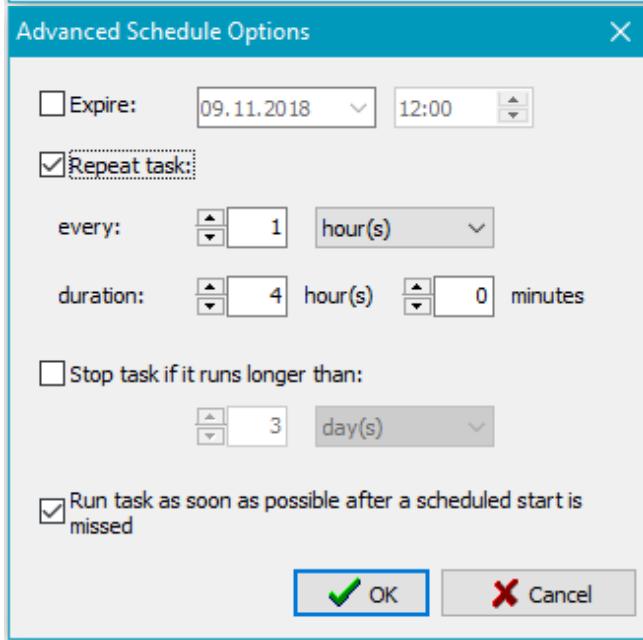
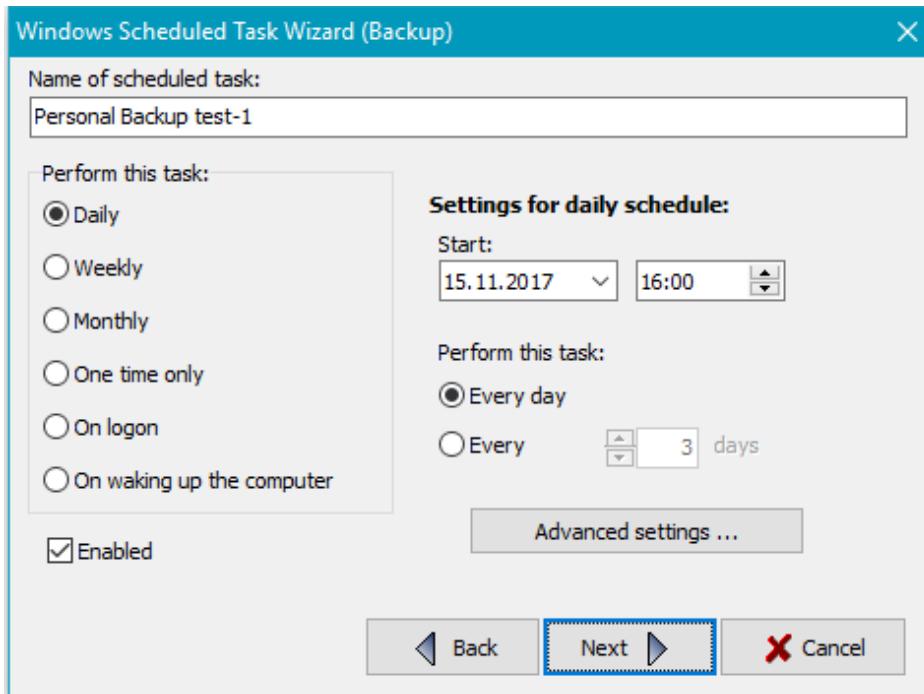
Logging can either be carried out as defined in the backup task to be performed or independently of this as selected here.

#### **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.

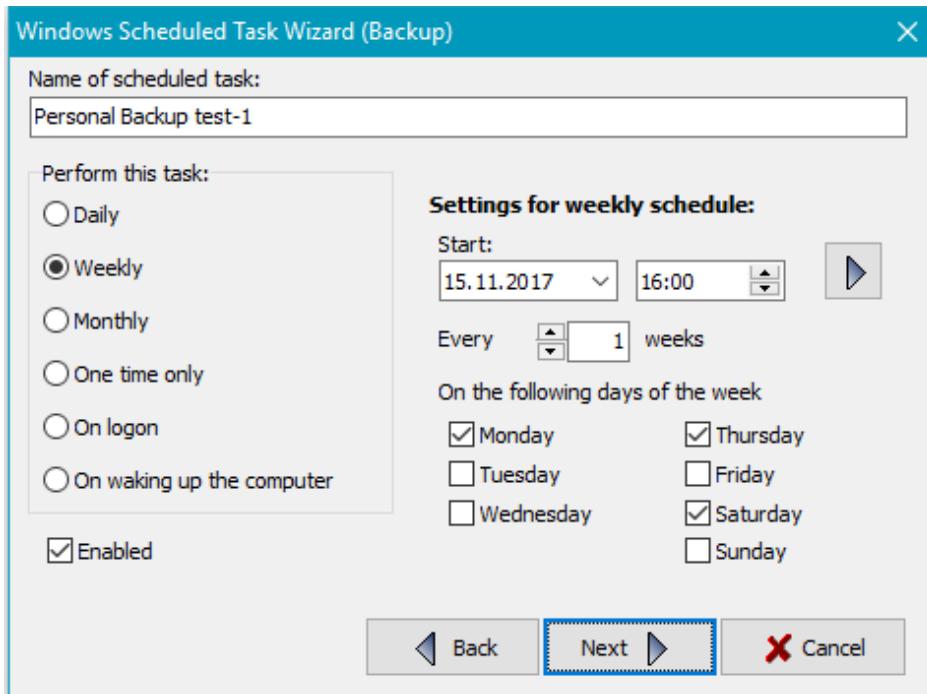
## **Daily schedule**



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*).

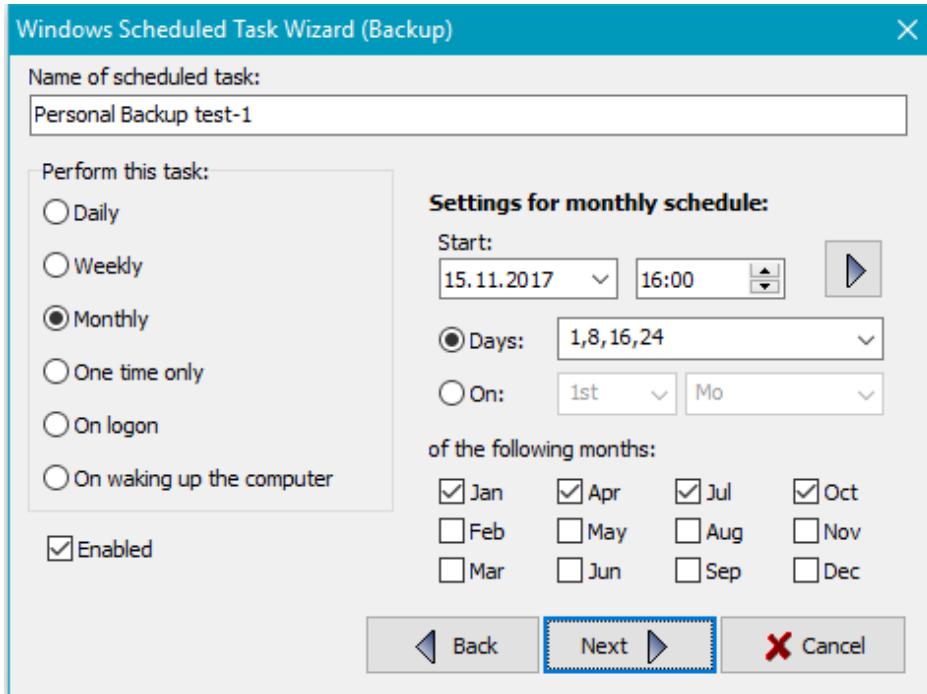
To enter the user account data click on **Next**.

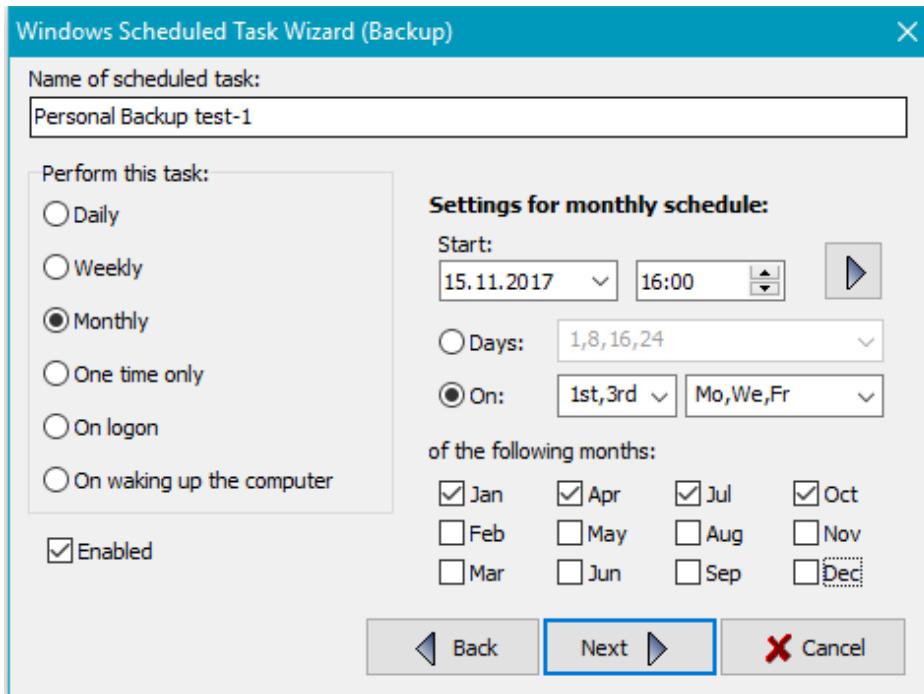
## Weekly schedule



The 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

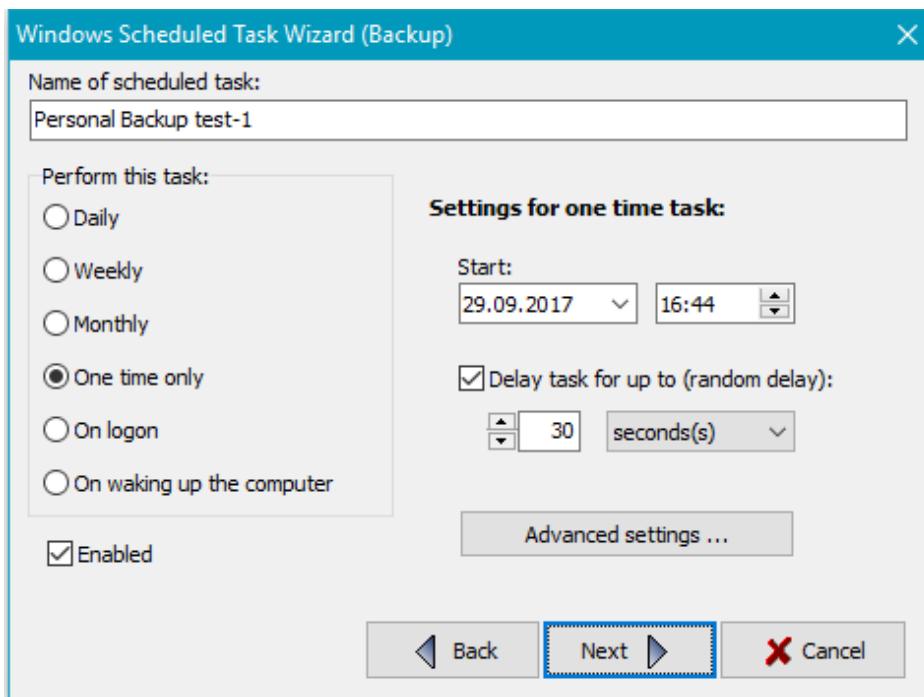




The start time and start date can be selected as described above for a daily schedule. The backup can be started on particular days of the selected months or on particular days of selected a week of the selected months. Clicking the upper right button will open the *Extended settings* (see above).

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.

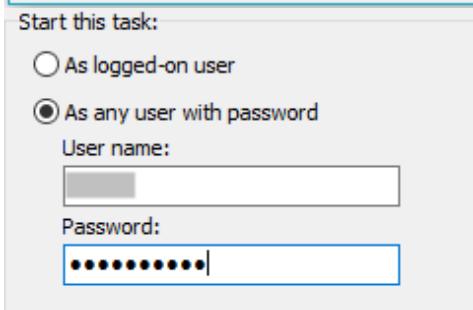
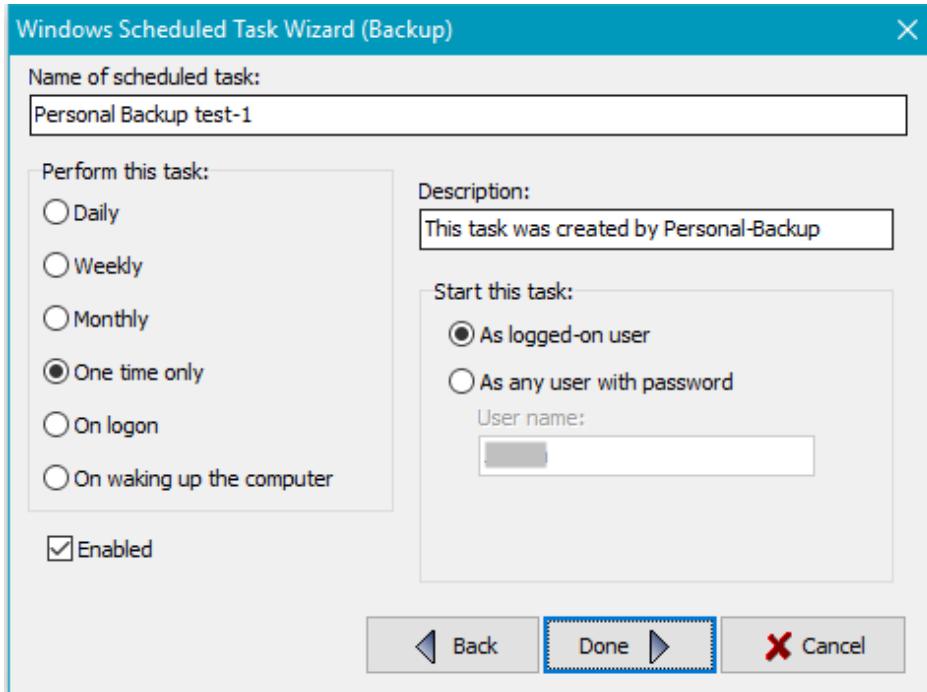
### On log on

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.

## User account



At this point you can edit the description of the task (Default: *This task was created by Personal Backup*).

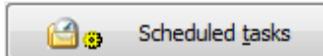
Finally, you must define how the task is to be started:

- **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).

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

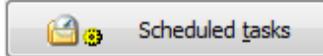
You can configure a Windows scheduled task to carry out an automatic Verify by clicking the



button inside the [Verify dialog](#). The configuration procedure 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 by clicking the



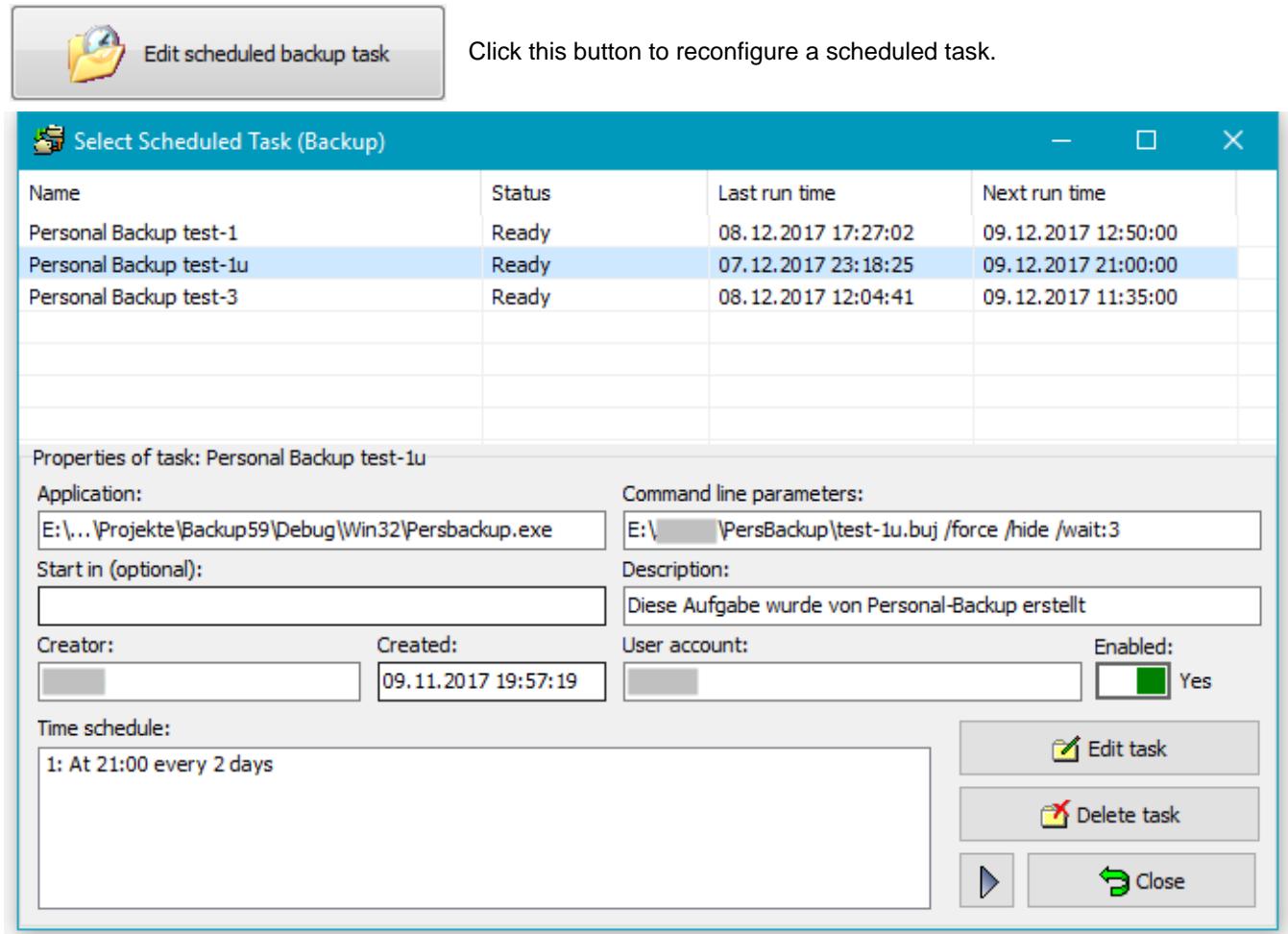
button inside the [Restore dialog](#). The configuration procedure is the same as [described above for backups](#).

## Automatic Cleanup using Windows Task Scheduler

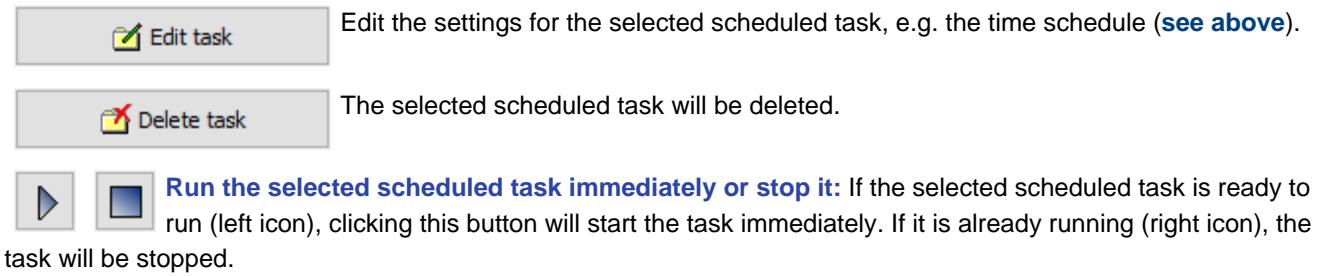
You can configure a Windows scheduled task to carry out an automatic Cleanup by clicking the



## Editing scheduled tasks



Only tasks listed 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:

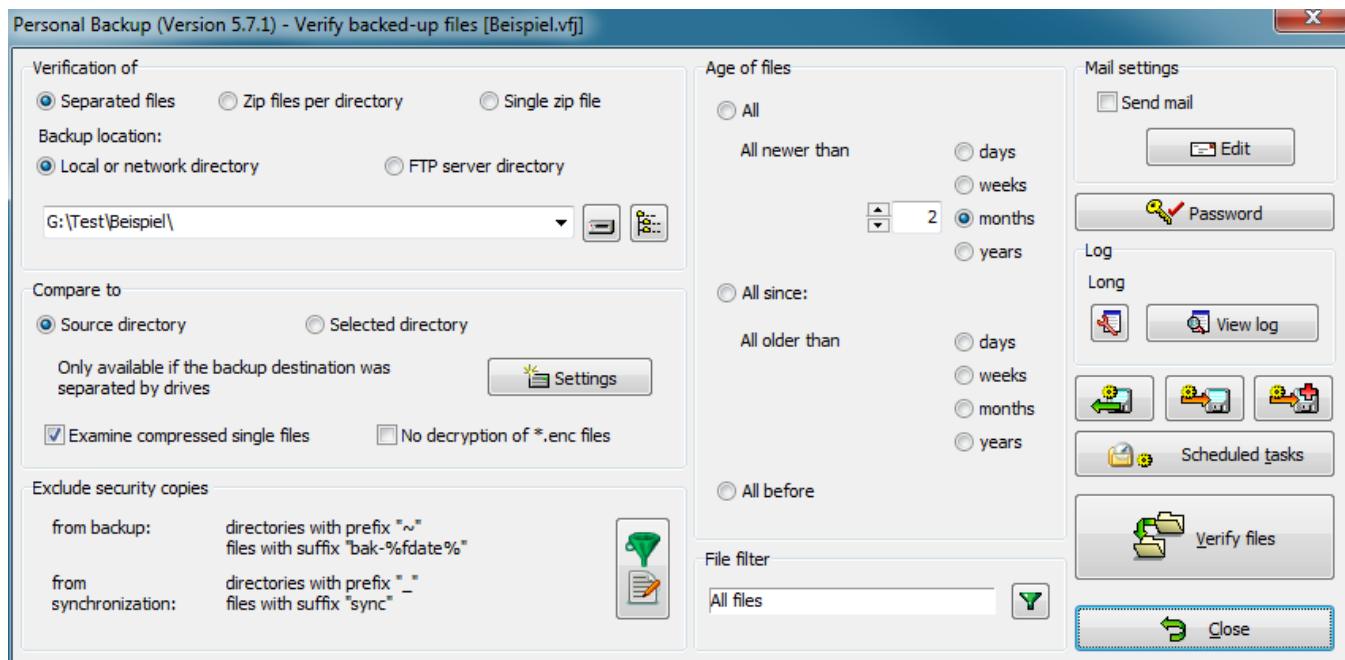


J. Rathlev, 24222 Schwentinental, Germany, July 2018

**Personal Backup Version 5.9**  
© 2001 – 2018, Dr. J. Rathlev

**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.

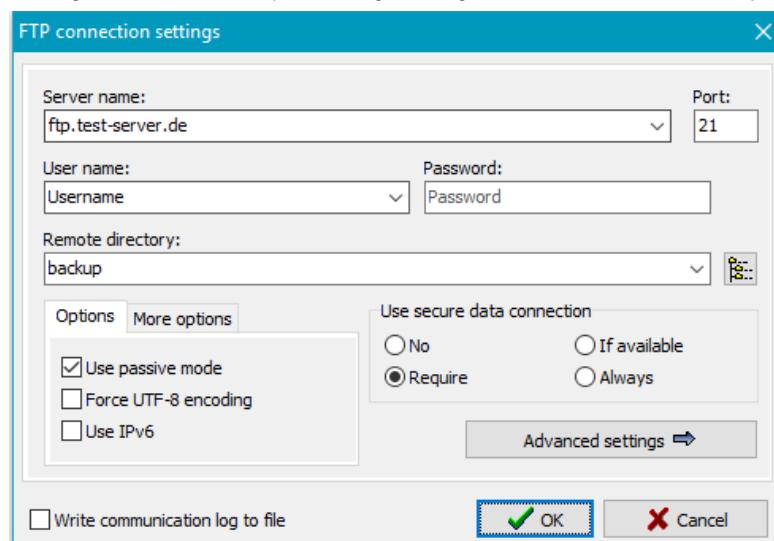
- **The backup directory is on an FTP server**

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 LwC, LwD, ...) 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**).

### 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. The appropriate checkboxes should be ticked (default) and the settings used during backup should be specified:

#### ● 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-#*).

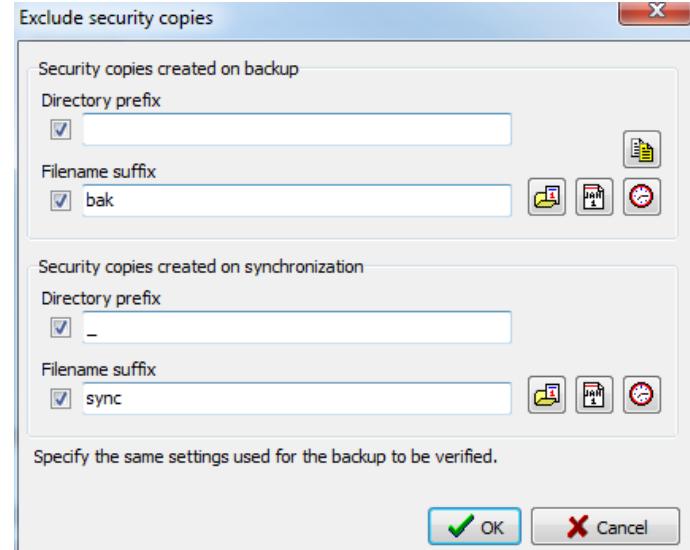
It is possible to make several entries separated by semicolons (e.g. *bak;bak-#*).

#### ● 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.



### 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

### 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.

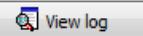
### Password

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.

The icon on the button changes to show whether a fixed password  was specified or the password has to be queried  on verify.

## Log settings

Clicking the  button will open a **dialog** to adjust the log settings for Verify.

Click then  button to view the current log.

## 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.

## 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 Verify 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](#).

J. Rathlev, 24222 Schwenkental, Germany, January 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



### 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.

There is a list of the most recently-used Restore tasks held by the program. Clicking the  button will immediately load one of these tasks. Right-clicking the button will allow the list to be edited.

**Personal Backup - 32-bit (Version 5.9.2) - Restore files from backup [Beispiel.rsj]**

**Restore from**

Separated files    Zip files per directory    Single zip file

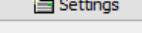
**Location:**

Local or network directory    FTP server directory

G:\Test\Beispiel\  

**Restore to**

Source directory    Selected directory

Only available if the backup destination was separated by drives 

Uncompress:  gz/gze  zip files  Restore empty directories  
 No decryption of \*.enc files

**File filter**  
except \*.lock   
 Take security copies into account  
from backup: Disabled   
from synchronization: Disabled 

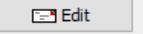
**Age of files**

All  
All newer than  days  
 weeks  
 months  
 years

All since  
All older than  days  
 weeks  
 months  
 years

All before 17.06.2015  Only this date

**Restore of**  
 Creation time  
 Alternate data streams  
 Document summaries  
 File permissions  
 Junctions

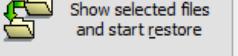
**Mail settings**  
 Send mail 

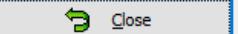
**Overwrite**  
 all existing files  
 existing files when older  
 no existing files



**Log**  
Short  







#### 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.

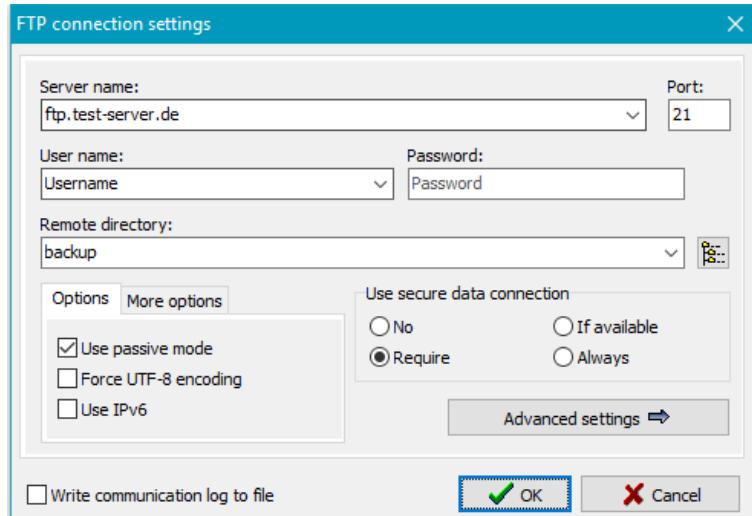
- **The backup directory is on an FTP server**

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 *LwC*, *LwD*, ...) 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

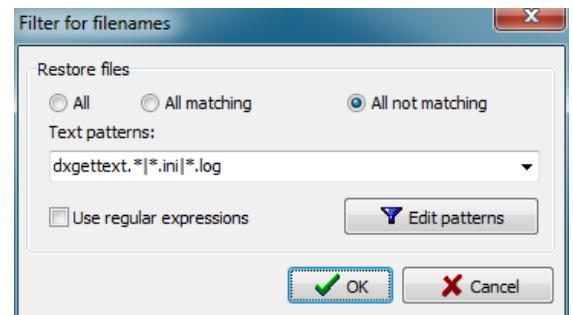
Personal Backup adds the file extension *enc* for uncompressed encrypted files. These files are decrypted automatically on restore. If there are files from another application using this extension, the decryption will fail. You can prevent the program from decrypting such files by checking this option.

## Restore empty directories

If this option is selected, even empty directories will be restored.

## 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](#)).

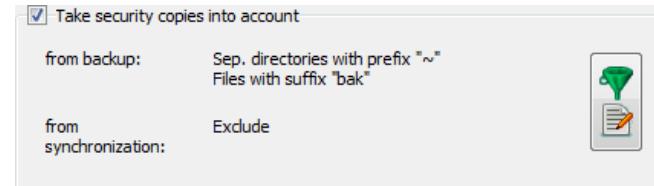


## Take security copies into account

This option is disabled by default and should be activated only if **Security copies** were created during backup.

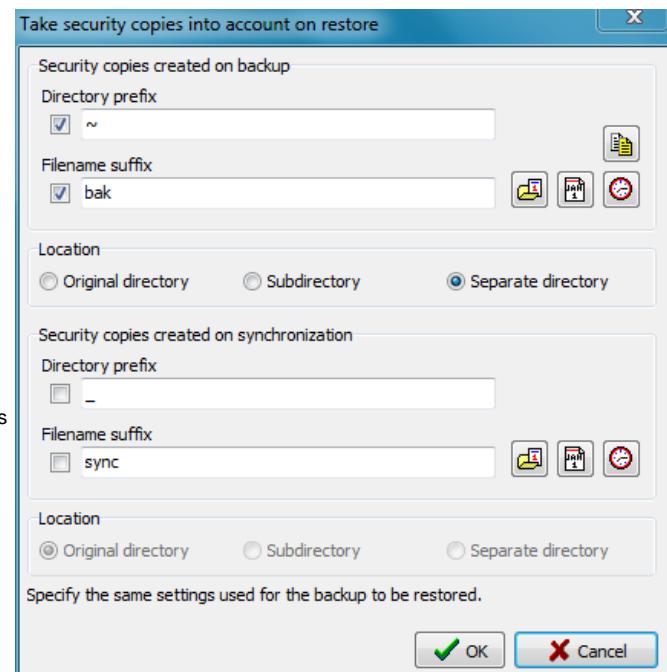
Use this option to define how these security copies shall be taken into account during restore. The settings for prefixes and suffixes must be set in the dialog (see screenshot on the right) as used during backup to identify these directories and files. If they are to be excluded, do not mark the checkboxes (default setting).

If you want to restore the state to that of a former date, first specify this date under *File age - All before ...* (see below). Then, select by ticking the appropriate check boxes which security copies are to be taken into account for restore. Do not forget to specify where the security copies were created on backup (e.g. in a separate directory). The preview then will show in each case the most recent security copy matching to the selected time slot. The restore will move the files automatically to their correct location.



### ● 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 which directory



option 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.

### 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 the given date

### 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.

#### 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.

#### 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.

#### 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.

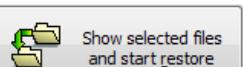
The icon on the button changes to show whether a fixed password  was specified or the password has to be queried  on restore.

## Log settings

Clicking the  button will open a **dialog** to adjust the log settings for restore.

Click then  button to view the current log.

## Start restore



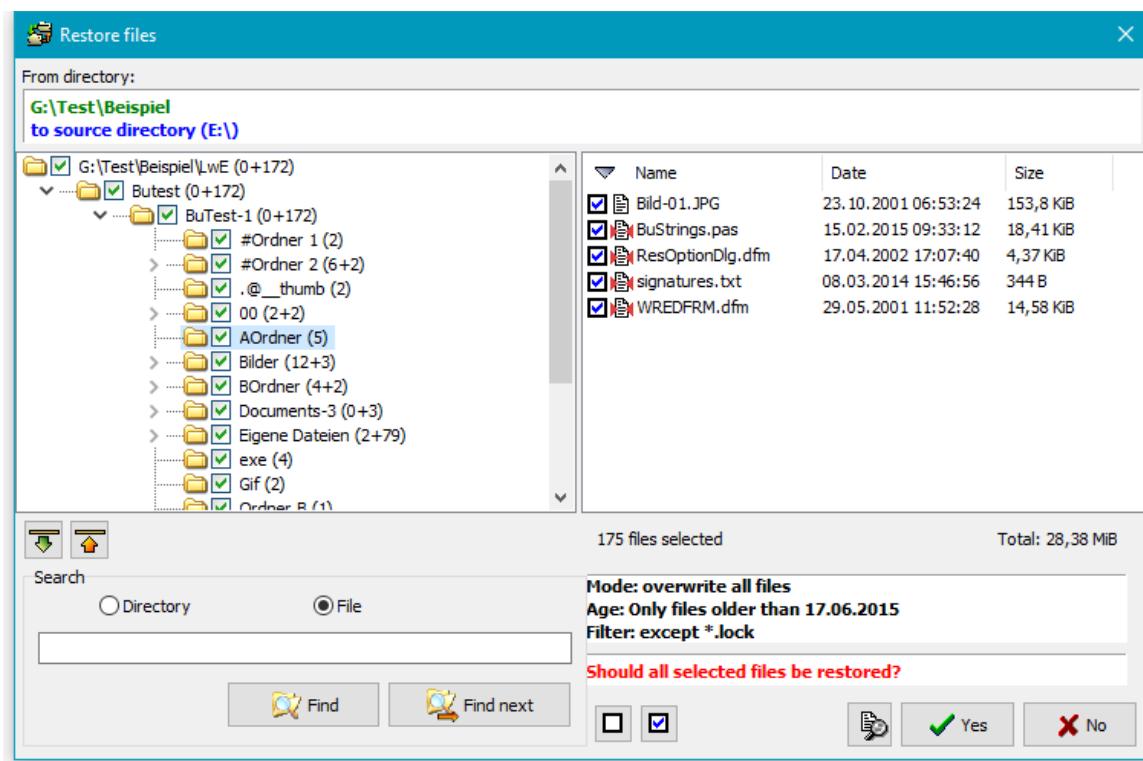
Clicking the  button will start the restore. Before restoring any files, the program will create and display a list of all files that match the filter conditions. If the selection is not to your liking, you can cancel the restore at this point and adjust your settings. It is also possible to select or 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). The selections required for

the external viewer and comparison program can be made by clicking the  button:

- **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.

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

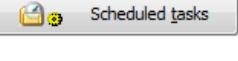


## Loading and saving restore tasks

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](#).



## The additional program PbRestore

The program can be started via the **Windows Start Menu** or in **Personal Backup** by selecting **Main menu - Tools - 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 screenshot shows the 'Restore files from backup - 32-bit (Version 5.1.0)' window. On the left, a tree view displays a directory structure under 'Directories': Test, 00, 01, 1, 1a, 1d, 1i, 1u, LwE, Butest, BuTest-1, 1Z, 2, 3, 4, 5, 78, Admin, arc, bak. In the center, the 'Restore from' field contains the path 'G:\Test\1u\LwE\Butest\BuTest-1'. Below it, three radio buttons are shown: 'selected files' (selected), 'whole directory', and 'files from schedule'. A list of files is displayed in a table with columns: Name, Größe, Elementtyp, Änderungsdatum. The table includes files like '@hattington.txt.gz', 'A1Test.dfm.gz', 'AddProgramsDlg.dfm.gz', 'AddProgramsDlg.pas.gz', 'Anzeige.res.gz', 'Backup.pas.gz', 'Bild-01.JPG', 'Bild-04.JPG', 'BuConsts.pas.gz', 'BuMain.pas.gz', 'BuStrings.pas.gz', 'Cleanup.pas.gz', and 'Color\_Mailer\_prices.doc.gz'. At the bottom, there are checkboxes for 'Uncompress:' and 'gz/gze files'. On the right, there are several buttons: a folder icon, a preview icon, a file list icon, a 'Restore' button, an info icon, and a power icon.

The program offers three options to restore data **backed up into separate files**:

- 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.

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 most right button to switch to **zip mode**.

#### Restore selected files

First, on the left select the directory or zip archive, containing the files to be restored. On the file list at right you can select the desired file(s) using the mouse in the normal way. Clicking the **Restore** button will initiate the copying of files into the specified destination.

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). **gz** files will automatically unpacked, on encrypted files (**enc** or **gze**) or on encrypted zip archives the user will be prompted to apply the password to start the decryption automatically.

Optionally you can disable the unpacking of **gz/gze** files.

#### 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:

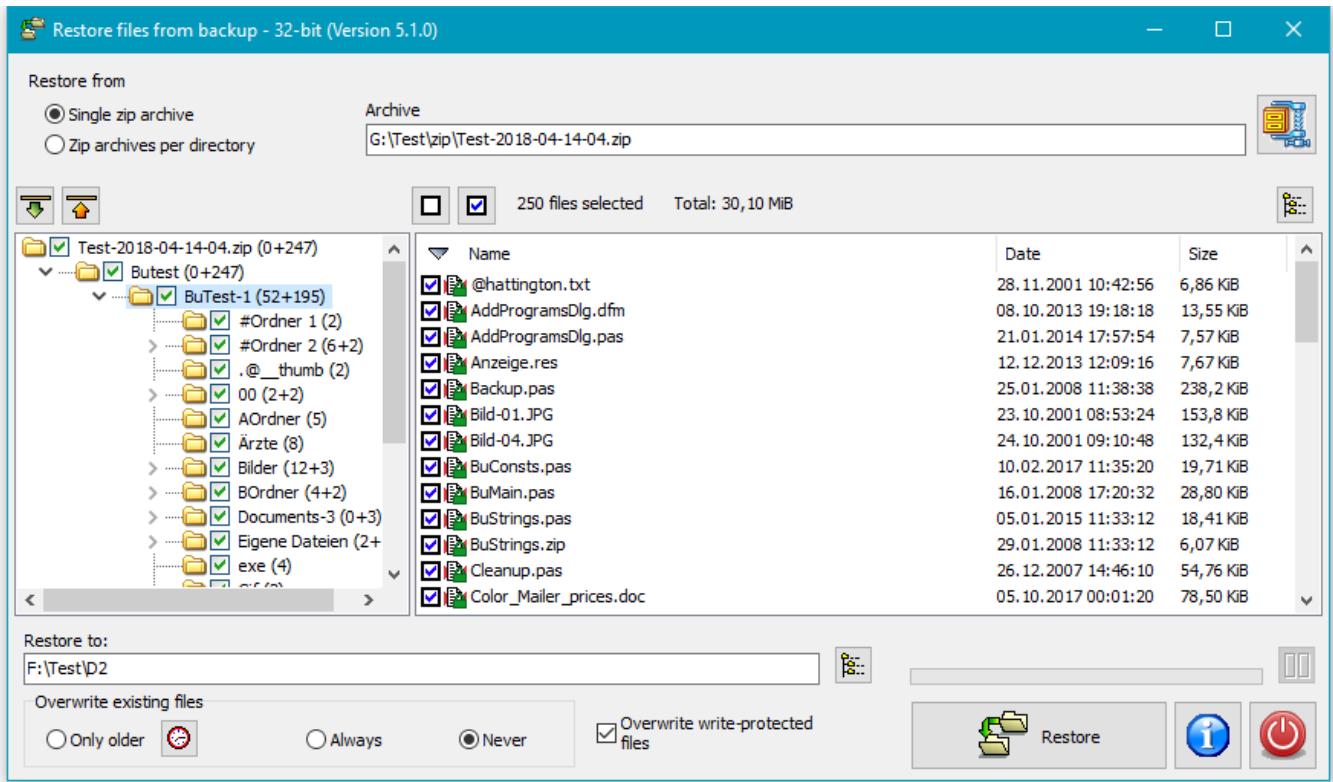
- **Date:** The latest version of each file relative to this date will be restored.
- **Scan only matching subdirectories:** Specify a filter pattern for the subdirectories to be scanned (e.g. **BD\*** for the example above). You can use \* and ? as placeholders.
- **Only for this drive identifier:** 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. 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.

 **Personal Backup Version 5.9**  
© 2001 – 2018, Dr. J. Rathlev





## 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.

### List of most recently-used Cleanup tasks

The program will always retain a list of the most recently-used Cleanup tasks. Click this icon and select a task from the list to load it into the Cleanup window with the saved settings.

Right-clicking the icon will allow the list to be edited.

**Personal Backup - 32 bit (Version 5.8.5) - Clean up backup directory [Beispiel.cuj]**

**Clean up**

( Local or network directory) ( FTP remote directory)

G:\test\Beispiel

**Delete**

( Files) ( Root directories) ( Only security backups)

**Filter for filenames**

All files

**Types selection**

Only these  All except  Examine compressed single files

dfm

**Synchronize**

( Off) ( With source directory) ( With following directory:)

**Preserve security copies**

from backup: Files with suffix "sync"

from synchronization: Directories with prefix "~" Files with suffix "sync"

**Age of files**

( All) All older than  
 days  
 weeks  
 months  
 years  
 All before  
 All since

**Mail settings**

Send mail

**Log:** Long

**Scheduled tasks**

**Show and delete selected files**

**Close**

### 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](#)):

**FTP connection settings**

Server name: ftp.test-server.de Port: 21

User name: Username Password:

Remote directory: backup

Options More options

Use secure data connection

Use passive mode  No  If available  
 Force UTF-8 encoding  Require  Always  
 Use IPv6

Advanced settings ➔

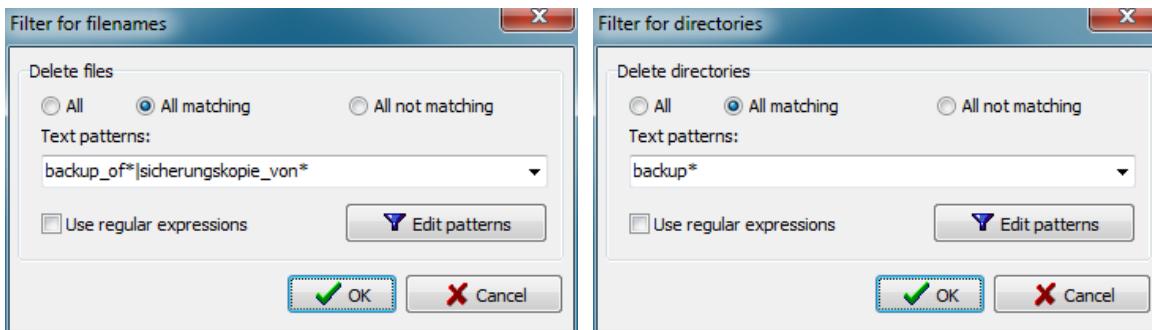
Write communication log to file

**OK** **Cancel**

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.

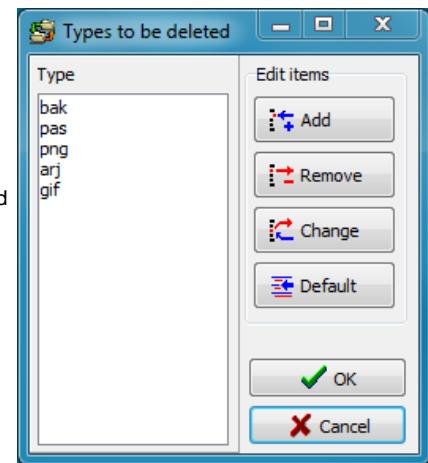
## File filters

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

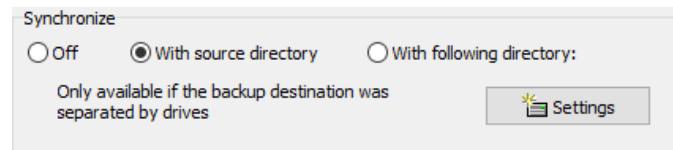
The cleanup may be confined to selected types of files (filename extensions). You can select whether **only the selected types** or **all but the selected types** will be deleted. Clicking the  button will open a dialog to edit the list of file extensions. Extensions are specified without wildcards and 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:



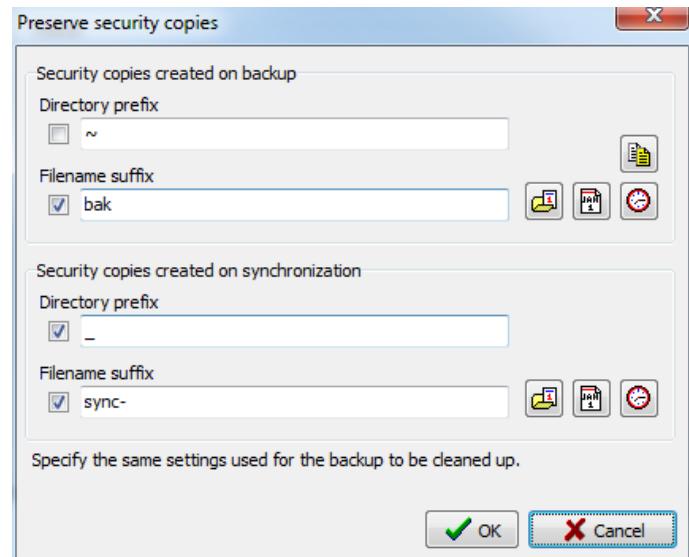
- **Off** - no synchronization, all files fitting the selections will be deleted
- **With source directory** - this option can only be used if the selected directory was processed by a backup using the default method **Separate files - Separate directories for drives**. In this case a separate subdirectory for each source drive has been created. By default these are named LwC, LwD, LwE, 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.

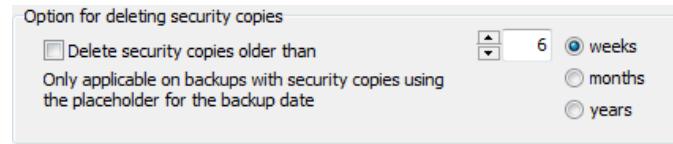
If placeholders were used on backup, clicking the appropriate button will insert the filter pattern needed to exclude these files.

### 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.

Bear in mind that in this case you must specify only the fixed part (without placeholder) in the settings for the selection of security copies (see above). 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

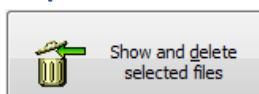
As with backups, a mail with status information and optionally a log file can be sent after performing a cleanup task. The **settings** are the same as for backups.

### 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.

### Start cleanup

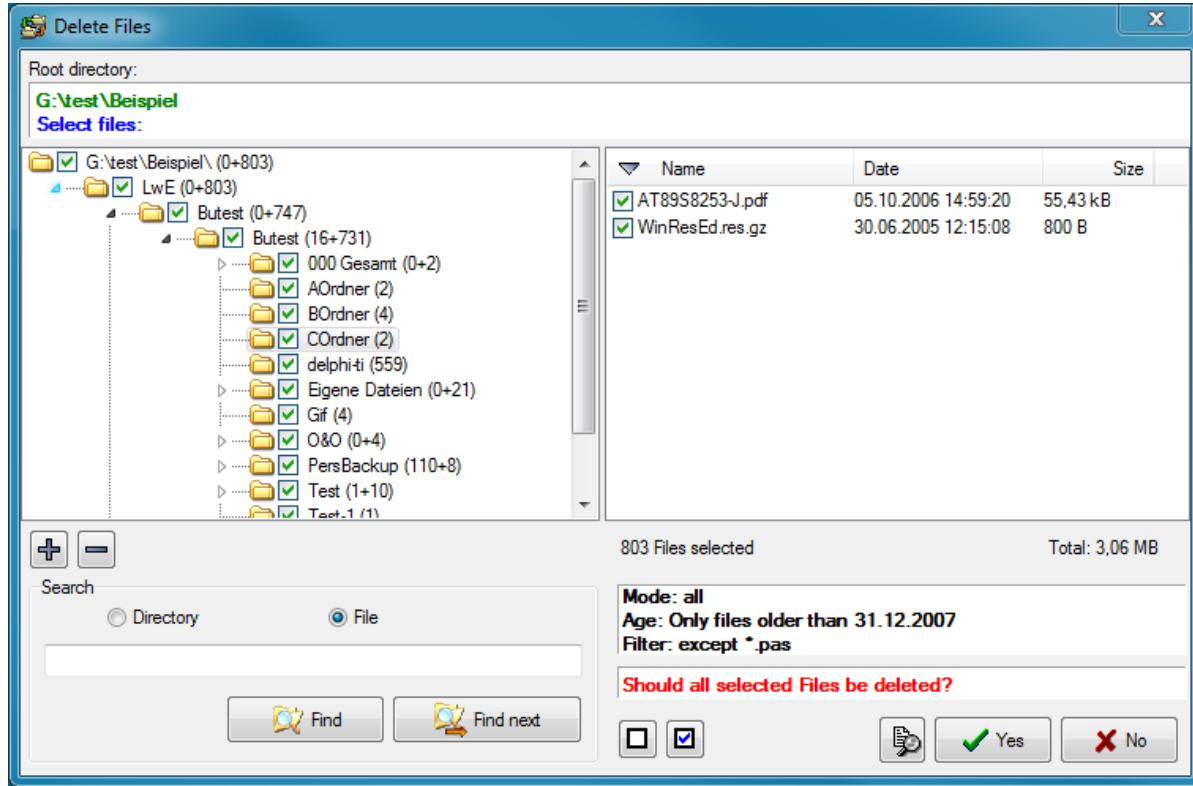


Clicking the button will start the cleanup. Before deleting any files, the program will create and display a list of all files that match the filter conditions. If the selection is incorrect, you can cancel the cleanup at this point and adjust your settings. It is also possible to select or deselect 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.



### 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**.

*J. Rathlev, 24222 Schwentinental, Germany, January 2018*



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Keyboard shortcuts

The following shortcuts will call the main functions of the program directly. The shortcuts are independent of your language setting.

Keyboard shortcut	Function
	1 Open the 1st automatic backup task
	2 Open the 2nd automatic backup task
	3 Open the 3rd automatic backup task
	4 Open the 4th automatic backup task
	5 Open the 5th automatic backup task
	6 Open the 6th automatic backup task
	7 Open the 7th automatic backup task
	8 Open the 8th automatic backup task
	9 Open the 9th automatic backup task
	0 Open the 10th automatic backup task
	1 Open the 11th automatic backup task
	2 Open the 12th automatic backup task
	3 Open the 13th automatic backup task
	4 Open the 14th automatic backup task
	5 Open the 15th automatic backup task
	6 Open the 16th automatic backup task
	T Select the destination directory
	D Add a directory to be backed up
	P Automatic backup with Windows Task Scheduler
	B Show directories to be backed up
	S Edit task settings
	O Edit task options
	U Show and select subdirectories
	F Edit file filter settings
	Y Select file types
	D Edit filter for subdirectories
	A Apply filter for subdirectories
	F Edit file filter
	Y Edit type filter
	Move program to background if automatic backup tasks are active

J. Rathlev, 24222 Schwentinental, Germany, December 2016



# Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Command line options

Having started the program via a desktop shortcut or having invoked it from another program (e.g. Windows Task Scheduler), you can control it by setting the following command line options (note: all options can be abbreviated: e.g. /force = /f = /for):

### Overview

/auto	/backupdir	/clean	/directory	/disable	/edit
/elevate	/end	/force	/hide	/ini	/lang
/log	/logdir	/mode	/narrow	/noaction	/portable
/prompt	/quiet	/repldrive	/restore	/reset	/showlog
/speed	/status	/stay	/suspend	/taskdir	/tempdir
/timeslot	/user	/verify	/wait	/zipname	

**Control file**   **Exit codes**

### Description

**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]**:

- **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 main menu).

### [TaskFile] /edit

Unlike the description above, no selection dialog will be displayed. Instead the specified task will be immediately opened for editing.

### /reset

The main window will be reset to its default position and an empty task will be loaded. 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:**

Immediately starts all ([#/force](#)) or one (e.g. [#1 /force](#), task no. 1) of those tasks configured for automatic backup. 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 ([.buj](#)) 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

**[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 ([.rsj](#)) 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 ([.cuj](#)) 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 ([.vfi](#)) is appended automatically. Prior to this, you must have configured and saved the Verify tasks (see [Verification of backed up files](#)).

**/timeslot:[Value]**

This option was renamed in version 5.9. The previous option [/gap:\[Value\]](#) is still working.

**Value** specifies a time slot for the files to be backed up:

**yyyymmdd**

Only files changed on the specified date will be backed up (e.g. [/gap:2011521](#) = 21 May 2011).

**yyyymmdd-yyyymmdd**

Only files changed between the specified dates will be backed up (e.g. [/gap:20100521-20110315](#) = 21 May 2010 00:00 - 15 March 2011 24:00).

**+yyyymmdd**

Only files changed after the specified date will be backed up (e.g. [/gap:+20110521](#) = after 21 May 2011 00:00).

**-yyyymmdd**

Only files changed before the specified date will be backed up (e.g. [/gap:-20110521](#) = before 21 May 2011 24:00).

**thhn**

Only files changed after the specified time on the current day will be backed up (e.g. [/gap:t0835](#) = today after 08:35).

**ox**

Only files changed more than *x* days ago will be backed up (e.g. [/gap:d14](#) = older than 14 days).

**dx**

Only files changed within the last *x* days will be backed up (e.g. [/gap: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. `/gap:q`) can be set.

**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):

##### **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.

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.

##### **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).

##### **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.

##### **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.

##### **logoff**

This option is similar to `/poweroff`, but just logs the current user off once the backup is completed.

##### **restart**

After completing the tasks, the system will be shut down and restarted automatically.

#### **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).

#### **/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.

**/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 and 8:** C:\Users\<Username>\AppData\Roaming\PersBackup5
- **Windows XP:** C:\Documents and Settings\<Username>\Application Data\PersBackup5

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:%progpath%\pb5-1.ini /t:%progpath%`

#### **/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 5`) 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 main menu ([Preferences Language](#)).

<b>xx = de</b>	German	<b>xx = it</b>	Italian	<b>xx = nl</b>	Dutch	<b>xx = ru</b>	Russian
<b>xx = en</b>	English	<b>xx = es</b>	Spanish	<b>xx = hu</b>	Hungarian		
<b>xx = fr</b>	French	<b>xx = pt</b>	Portuguese	<b>xx = pl</b>	Polish		

**/log:[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 main 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.

**/narrow**

The program will start in a narrow window without the toolbar (left) and without options for automatic backup (right). This is useful if for service purposes only a reduced screen resolution is available. You can switch to the normal window using [Preferences View](#) in the main 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\Persbackup.exe B-Task1 /force

**2. Start backup task and shut down: (Filename: B-Task2.buj):**

Command line: %ProgramFiles%\Personal Backup\Persbackup.exe B-Task2 /end:poweroff

**3. Start cleanup task (Filename: L-Task.cuj):**

Command line: %ProgramFiles%\Personal Backup\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\<username>\Documents)
- **%appdata%** or **%apppath%**: Path to user's **Application Data** (C:\Users\<username>\AppData\Roaming)
- **%localappdata%**: Path to the user's **Local Application Data** folder (C:\Users\<username>\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)%**<sup>\*</sup>: Path to the **32-bit Program Files** folder (C:\Program Files (x86))
- **%commonprogramfiles(x86)%**<sup>\*</sup>: Path to the **32-bit Common Program Files** folder (C:\Program Files (x86)\Common Files)
- **%profile%**: Path to user's **Profile** folder (C:\Users\<username>)
- **%desktop%**: Path to the user's **Desktop** folder (C:\Users\<username>\Desktop)
- **%favorites%**: Path to the user's **Favorites** folder (C:\Users\<username>\Favorites)
- **%progpath%**: Path to the installation folder of **Personal Backup** (default: C:\Program Files\Personal Backup 5).
- **%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 5**:

Command line: %ProgramFiles%\Personal Backup\Persbackup.exe /i:%progpath%\pb.ini

for **task** in **C:\Users\<username>\Documents\PersBackup**:

Command line: %ProgramFiles%\Personal Backup\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 5\pb5-1.ini
/log:2 ;create long log
/wait:1
/hide
/quiet
/force
; Backup tasks: C:\Program Files\Personal Backup 5\backup-1.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 Schwentinental, Germany, April 2018*



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## 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:** **PbPlaner** as part of the package Personal Backup Version 5.9 requires Windows Task Scheduler version 2 which has been available since Windows Vista. Hence, the program cannot be used under Windows XP any more.

**Configure backup schedules**

Backup schedules:						
Name	Task	Cycles	Steps	Start	Type	
Test	test-1.buj	A	2	7	Di	Diff
Test-3	test-1.buj		4	5	Mi	Incr
Test-2	test-2.buj		4	7	Fr	Incr
<b>Test-1</b>	<b>test-plan-s.buj</b>		<b>2</b>	<b>7</b>	<b>Mo</b>	<b>Incr</b>
Test-4	Mail.buj		4	7	Mi	Incr
Space Test	test-1.buj		1	7	Mo	Diff

**Schedule settings**

Name:

Backup task:

Number of cycles:  Steps per cycle:  

Start on:     

differential  incremental  Silent operation

 Create Windows scheduled task  Edit Windows scheduled task    Quit

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 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.

**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 ...:** Select the **differential** or **incremental** backup mode for the additional backups within a cycle. The full backup always uses the settings established in the backup task: *Update* or *Full (new)* ([see also here](#)).

**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.

## 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.

#### /noprompt

By default, errors during the execution of an alternating schedule are displayed as user prompt on the desktop. If this option is set, errors are reported instead to the Windows event log.

#### /delay:[n]

You can not use this option together with the option */noprompt*. It specifies the time after which an error prompt 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\PersBackup5
- **Windows XP:** C:\Documents and Settings\<Username>\Application Data\PersBackup5

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*



## 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.

#### 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.

## 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 subfolders) 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.

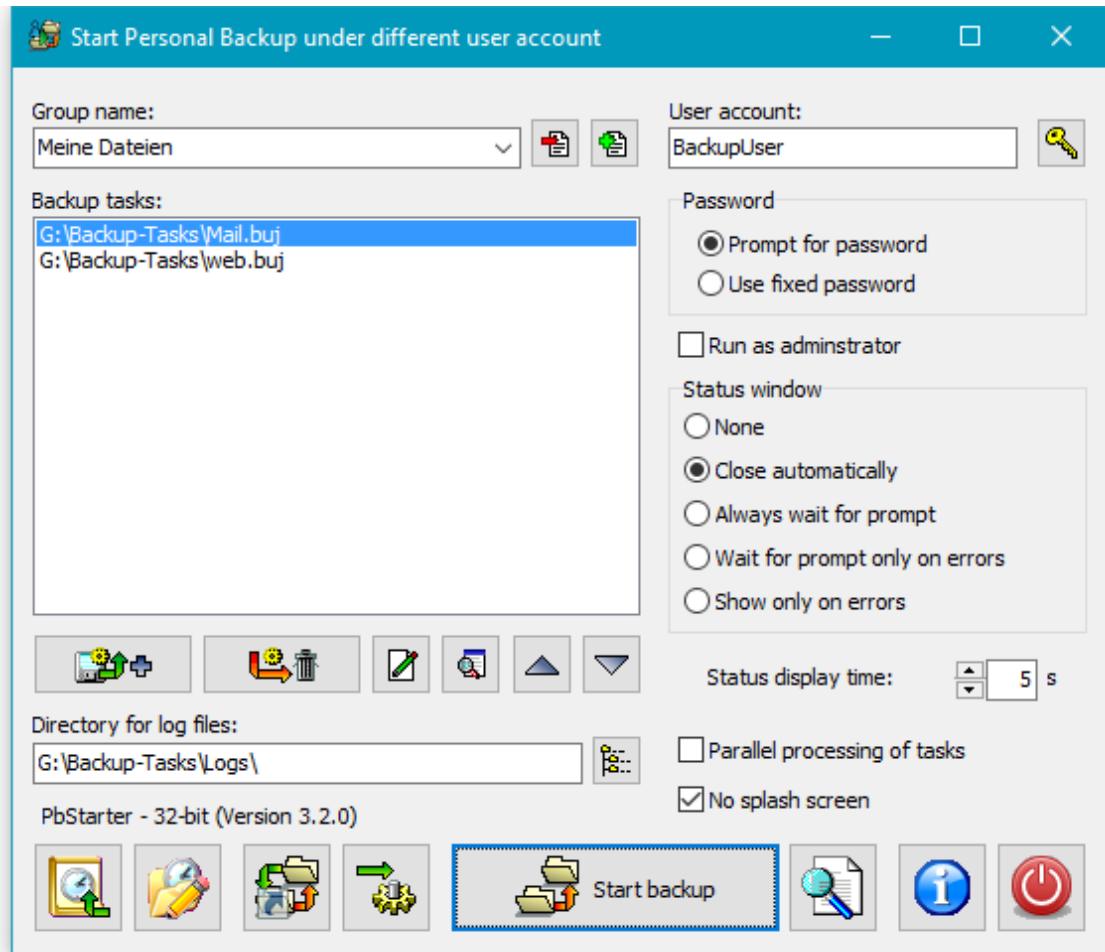
---

## 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.

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:



### 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.

On the right, 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.

The checkboxes below let you select whether the tasks of the group shall be processed sequentially or in parallel and whether the Personal Backup splash screen shall be displayed on program start or not.

In the field to the bottom left, a directory name can be entered. During backup all log files will be saved at this location. 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\PersBackup5).

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

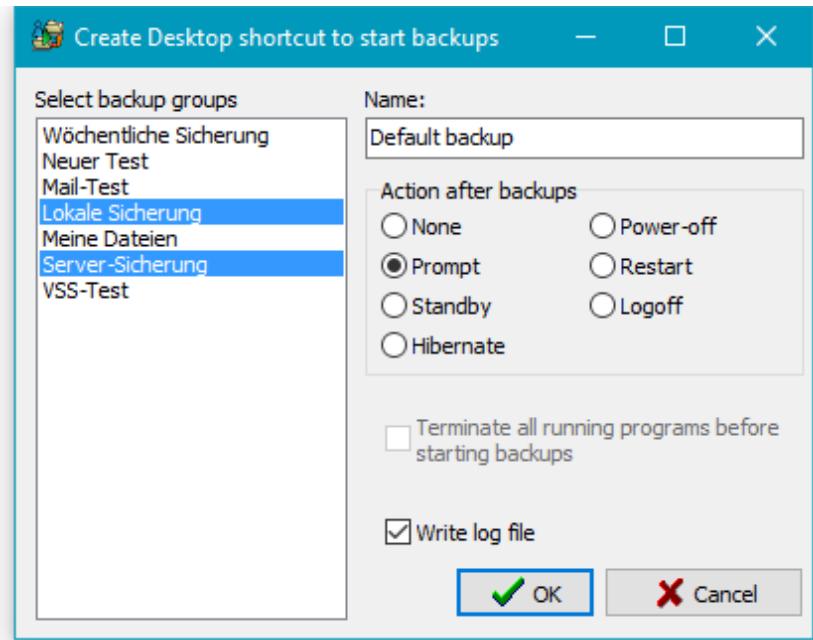


Clicking the third button from the left at the bottom will open a dialog (shown on the right) for creating a Desktop shortcut to start selected backup groups with one double click under the associated user accounts. You can combine this with a subsequent action (e.g. Poweroff). In this way it is very 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!

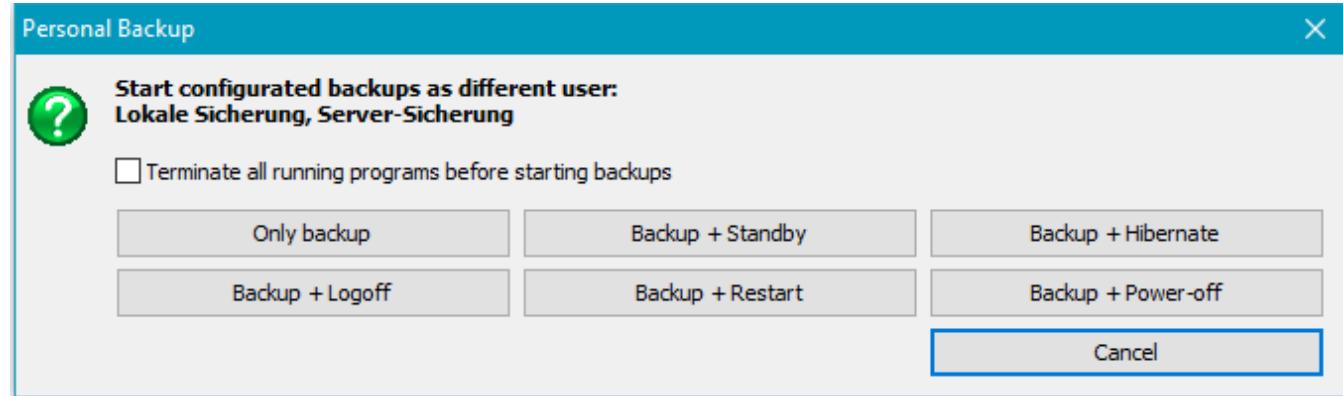
The required settings can be made in a dialog (see screenshot). The list on the left shows all configured backup groups. Select the groups to be run from the

Desktop shortcut by click and Ctrl-click. On the right you can select the action to be performed after the backups have finished. 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).

---

J. Rathlev, 24222 Schwentinental, Germany, April 2018



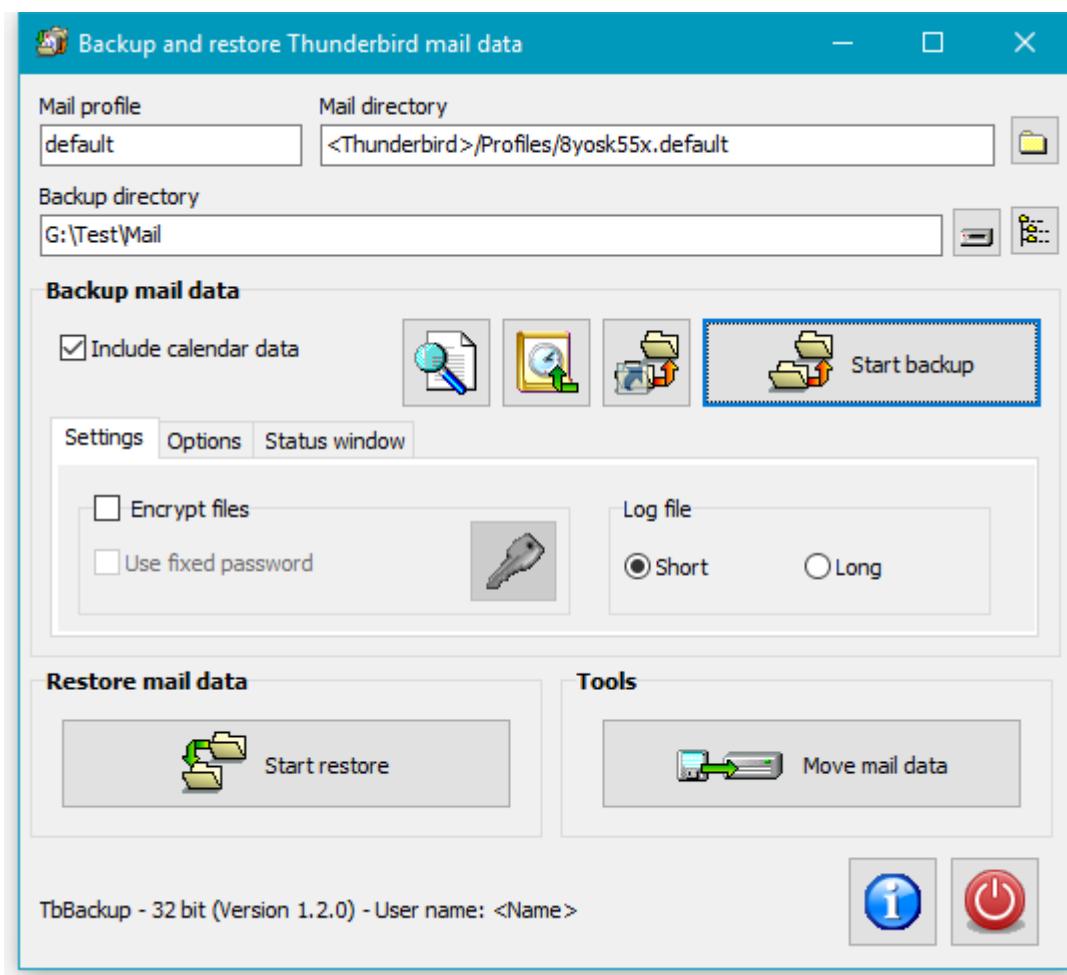
## Backup and Restore of Thunderbird mail data

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. 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 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.

### 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.



**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

**Settings** Options Status window

Synchronize backup directory  Send mail after backup  Edit  
 Use Recycle Bin

- **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](#)).

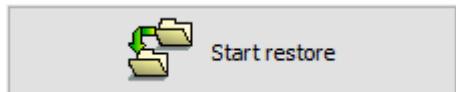
## Status window

**Settings** Options Status window

Wait only on error Status display time:   s

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.

## 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.

## 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.

## Tools

### Move mail data



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.

## 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 profile called *tb-<profilename>.buj* (e.g. *tb-default.buj*) with all required settings. 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 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 or to start the backup directly from there.

The same applies to a Restore. In this case a **restore task** called *tb-<profilename>.rsj* (e.g. *tb-default.rsj*) will be created and executed by Personal Backup.

---

J. Rathlev, 24222 Schwentinental, Germany, April 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



## Tutorials for special issues

### Overview

- Configuring individual alternating schedules
- Backups using Volume Shadow Copies (VSS)

### 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 Windows Task Scheduler with its manifold options for starting an application to realize almost any alternating schedule. How to do so, is explained below using an example.

#### 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 and then at 11:00, 14:00 and 17:00 in each case these being differential backups. No backups shall be overwritten before the following week. The destination is a hard disk with the volume name *Backup*.

1. Configure 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. Create a **differential backup** using the same settings as above with the following exceptions:

**Destination:** *:Backup:\Bu-%dow%\D-%hour%*

**Backup mode:** *Differential*

Then save this task (e.g. as *Bu-Diff*).

3. Insert the **full backup into Windows Task Scheduler**:

Open the full task (*Bu-Full*) and insert it into Windows Task Scheduler by clicking the button *New backup ..* (in the upper right of the program window): *Daily start at 08:00*.

4. Insert the **differential backup into Windows Task Scheduler**:

Open the differential task (*Bu-Diff*) and insert it into Windows Task Scheduler as described above: *Daily start at 11:00* and using **Advanced settings** 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).

### Version-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 and 8).

## Prerequisites:

1. Download **vscsc** or **VS-Toolkit** as zip file
2. Extract the desired version (32 or 64 bit, Windows XP or Windows 7) 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 vscsc 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\vscsc.exe -exec=BuAppData.bat C:
respectively

@echo off
e:\Programs\Vss\vstoolkit.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.

*vscsc* 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 *vscsc* automatically.

J. Rathlev, 24222 Schwentinental, Germany, January 2018



## Personal Backup Version 5.9

© 2001 – 2018, Dr. J. Rathlev



### Author:

**Dr. Juergen Rathlev**

24222 Schwentinental, Germany

E-Mail: pb(a)rathlev-home.de

Homepage: <http://personal-backup.rathlev-home.de/index-e.html>

### Acknowledgements:

The program was written using **Embarcadero Delphi 10 Seattle ®**.

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 - <http://regexpstudio.com/>

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 - <http://www.indyproject.org/>

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit

© 1998-2017 The OpenSSL Project - <http://www.openssl.org/>

The patches for **Indy OpenSSL** (Version 1.0.2) are supplied by **Frederik Winkelsdorf**

© 2015-2018 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

© 1997-2016 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).

### Licensing

#### 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.

J. Rathlev, 24222 Schwentinental, Germany, January 2018