Data Backup

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DATA BACKUP

It is essential to keep up to date backup copies of your data!!

Backups are a librarian's lifeline.

Backups are a copy of all the valuable data.

Backups contain all the hours, days, months and years of work.

If a computer breaks down, is damaged or stolen, if a bad virus scrambles everything, the Bookmark program can always be downloaded from the Internet and a backup restored.

No recent or good backup = having to re-catalogue the entire library again.

It is vital to keep up-to-date backups!

Important: Use the Bookmark backup system even if another backup system is in place such as a server-based backups. Bookmark backups do not depend on IT support or a server. They are fast and easy.

How Bookmark Backups Work

Because the database file can be very large, backups *compress* all the data files into a single smaller "archive file". This is always made in Bookmark's location (folder and drive). The archive file is then *copied* to a destination. Always. Every time. For every type of backup, even external.

- If the MariaDB database engine is being used, all of the data is first extracted into a large text file. If SQLite is used, this step is unnecessary

- Compression produces a file called "Backup". A copy of the archive file is also made to reflect the day of the week or month or year or colour.

- The backup files are then copied to the destination, such as a USB flashdrive or formatted rewritable CD or an external drive or OneDrive or elsewhere.

- *A backup to Bookmark's location is always made even though the destination is external.*

- *It is not necessary to do both an external backup and a backup to Bookmark's location.* They are both automatically done at the same time in one step.

Bookmark automatically makes a backup to its own location at the beginning of each day.
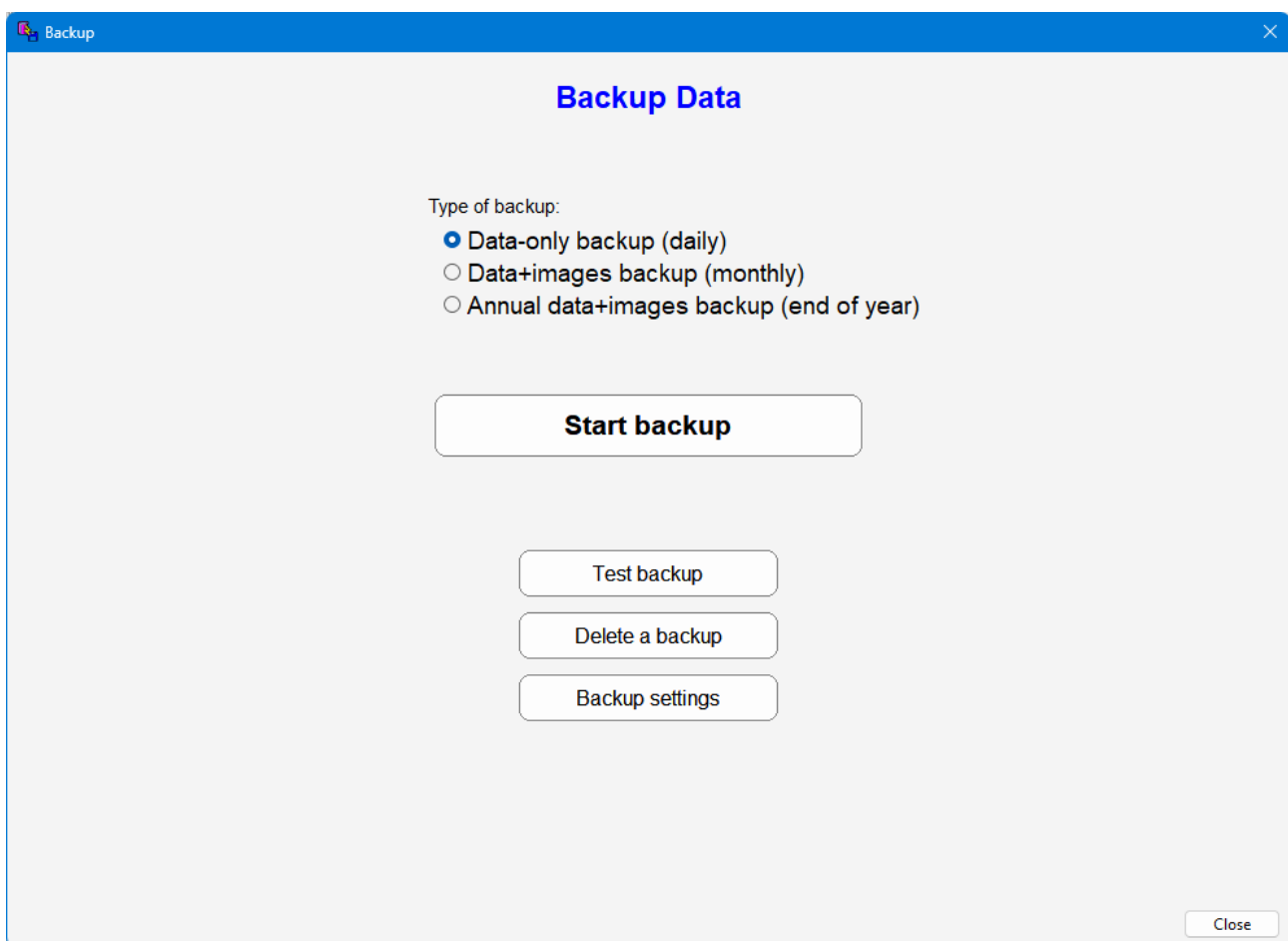
How to Backup Data

From the Main Menu, select Utilities.

On the Utilities menu, click on Backup.

The Backup Data window is presented.

Types of Backups

- ● Data-only backup (daily)
- ○ Data+images backup (monthly)
- ○ Annual data+images backup (end of year)

Bookmark offers three types of backups:

- Regular daily backup

- Once-a-month larger backup

- End of year large backup

Daily Backup
This is the normal day-to-day backup. _It should be done at the end of every day Bookmark is used_. The daily backup makes a copy of the main database which contains all text data: cataloguing, borrowers, loans, transaction history, etc. _It does not include book cover image files, borrower photo files, other images, icons or sounds._

Monthly Big Backup
Every month, perform a Monthly Backup. This backup includes covers, photos, etc. that are not normally included in the daily backup.

Monthly backups can take much longer if thousands of book cover images are involved. The resulting compressed backup file is also much larger. For large collections, it can be 1 Gb or more in size.

End of Year Backup
The end of year backup is identical to the monthly backup but the filename is different. It should go onto a USB flashdrive or other external device at the end of the year.

Test Backup
This allows checking backups to see if they are healthy.

Delete Backup
Backups accumulate at Bookmark's location. This function allows deleting old backup files.
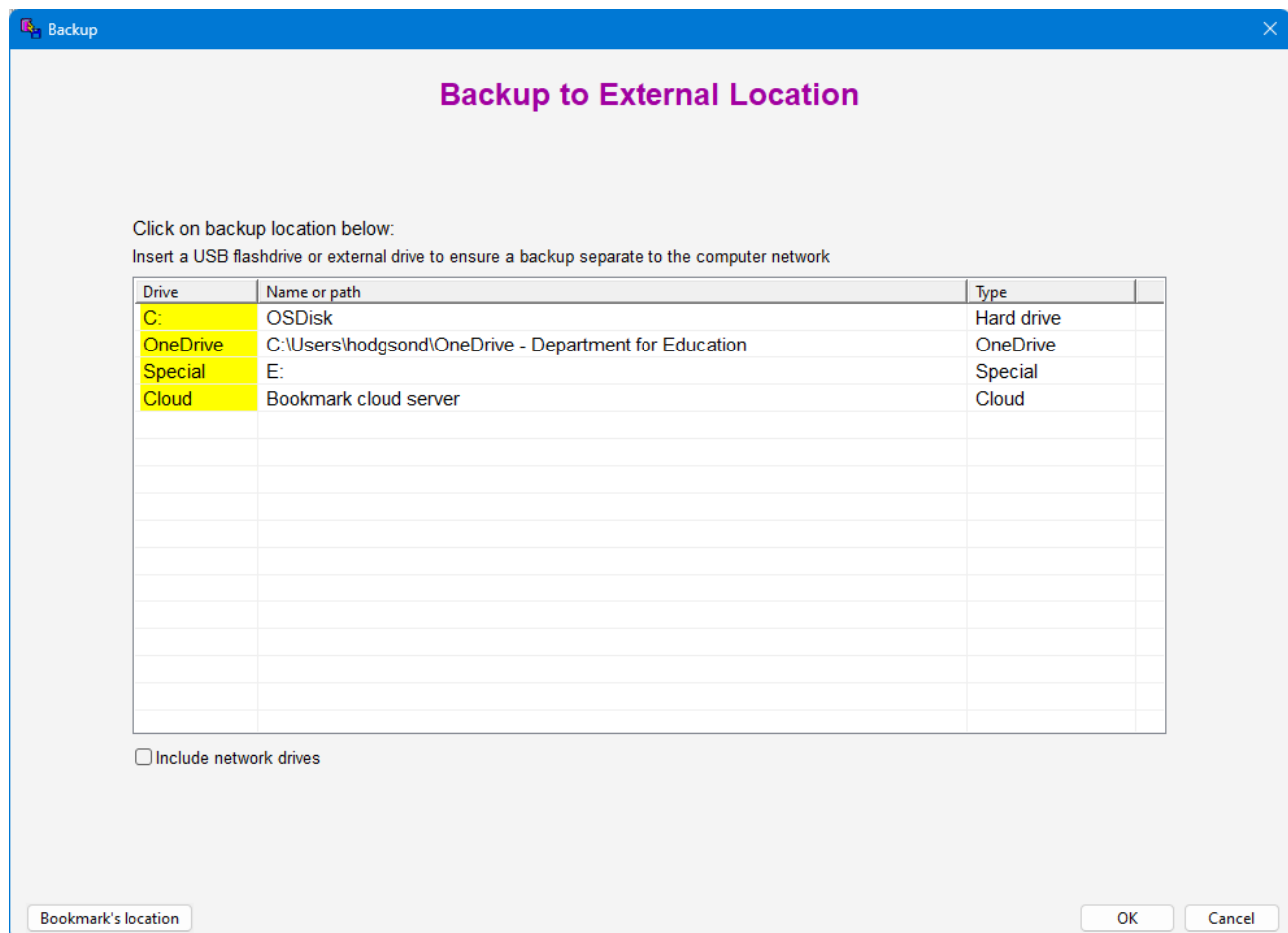
Remember: _**BACKUP! BACKUP!! BACKUP!!!**_

Start Location

Start backup

After selecting the type of backup, click on the Start Backup button.

Backup to External Drive

This is the normal end-of-day backup. All of the normal drives available are displayed.

Network drives are not displayed unless the checkbox is ticked.

USB flashdrives appear as a "removable drive".

External hard drives appear as "Fixed hard drive".

OneDrive and an Alternate location (see below) are also listed if they have been set up. Use External Location to backup to these locations, too.

CD / DVD drives always appear in the list even if a disc has not been inserted. This is because the drive is spotted and not the disc.

The Cloud is Bookmark's webserver on the Internet.

To indicate the destination drive, click *once* to highlight.

Note: You can back up to two or more drives at the same time. Hold down the Ctrl key and click on the other drive(s) to highlight multiple destinations.

Click OK to begin the backup. Bookmark will remember these drives and automatically highlight them next time.

Note: If you forget to insert the flash drive or external drive, just plug it in and it will appear in the list in a few seconds.

USB FlashDrive

USB flashdrives are the normal destination for backups.

They have *proven* to be *reliable* and *easy to use*. In the drive list, they appear as a "Removable drive".

Big capacity flashdrives are not needed. Any flashdrive with 2Gb of space or larger can be used. More than 8Gb isn't needed unless the drive is to store other files.

Flashdrives can wear out. Mostly it is the metal pins that attach the USB plug that snap. If this happens, the flashdrive is completely inoperable. To avoid this disaster, it is suggested to replace flashdrives ever year or two or three, depending on how often then are used.

Drives other than FlashDrives and CD's

Backups can be made to other drives as well. These can include external hard drives and SSD (solid state) drives. A backup can be made to these drives if you have permission to create files on them.

A backup can be made to destination listed provided you are allowed to write to it.

Cloud Storage – OneDrive, GoogleDrive, Dropbox, etc.

Backups can be made to cloud storage if this is available on your system. These include Dropbox, OneDrive and GoogleDrive.

When the backup is made, it is automatically uploaded to cloud storage.

See below to set up OneDrive.

For Dropbox and GoogleDrive, a mapped drive letter to the relevant folder is strongly recommended. This allows it to appear in the external locations list.

Note: these backups depend on the user's login and/or email. They are not "universal" like a flashdrive or external drive.

Bookmark's Location

Backups to Bookmark's own location is handy sometimes for a quick backup before performing a big data change. It is a very poor location for regular backups. All the eggs are in one basket. Do not rely on Bookmark's Location only backups. They should be done rarely.

Technical detail: the Backup Process

1. If the MariaDB database engine is used with Bookmark, all of the data is first exported into a large file.

2. All the data files are first compressed into a single file called Backup.zip or Backup.lzh (depending on format). This is made at Bookmark's location. This is always done first! Always. It is not necessary to also do a separate "Bookmark location" backup after an external one. That would be doubling-up.
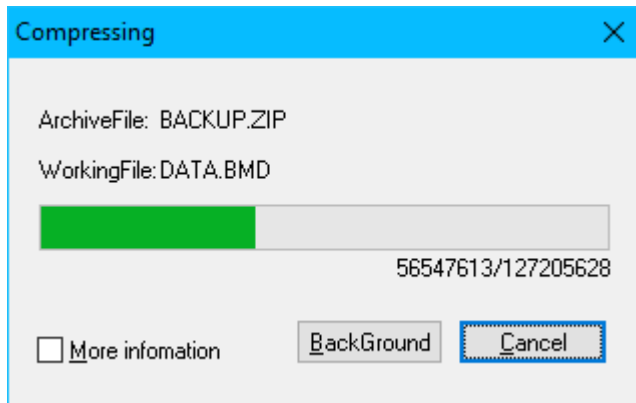
3. When finished, a copy is made of the backup file. A different copy is made for each day of the week. This is also placed at Bookmark's location.

4. Both backup files are then copied to their destination – e.g. a USB flash drive, a CD, external drive, network drive, etc. (Windows 10 display below. Windows 11 looks different!)
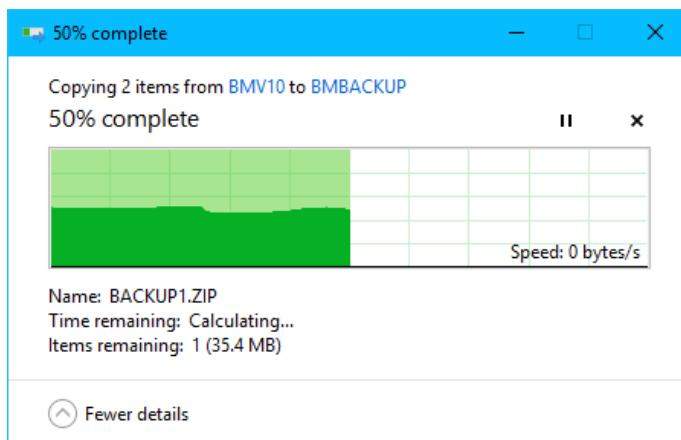
4. All done!
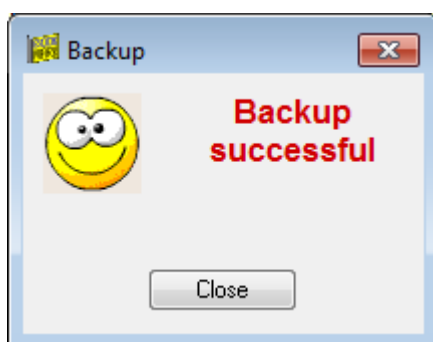
Important information!
Backups to another drive *always* copy the compressed backup file and its copy into a folder called \Bmbackup on the destination drive. If the folder is not present, it is created.
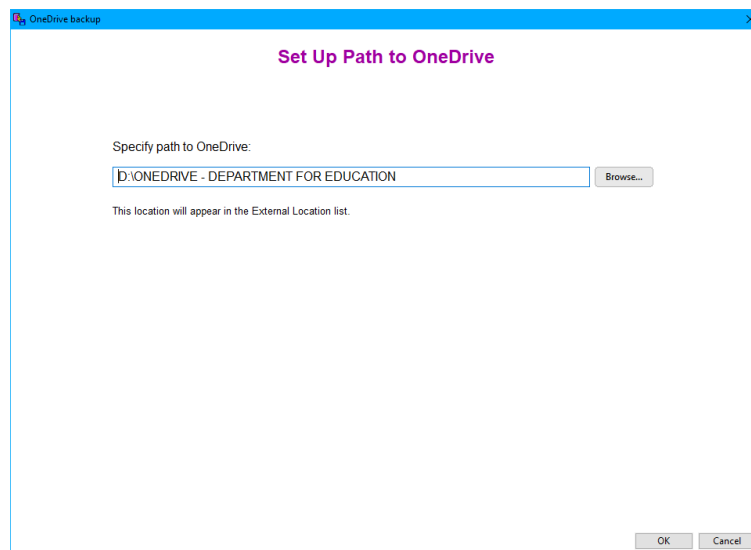

Remember: ***BACKUP! BACKUP!! BACKUP!!!***

OneDrive

Microsoft's OneDrive is a cloud-storage location. It is used for backups. The OneDrive app comes with Windows 10 and 11. Files can be copied to OneDrive, retrieved later, or shared with another computer.

OneDrive is an excellent backup location, provided it can be accessed on another computer or a new computer or if the previous librarian has left.

All school staff in South Australian Department for Education schools have a OneDrive account. This account is attached to each person's login. It is not universal. Restoring backups may be a problem if a different login is used. If the same login in always used, then OneDrive is a good backup destination.

To use OneDrive as a backup destination in Bookmark, click on the "Backup Settings" button then on "Set OneDrive location".

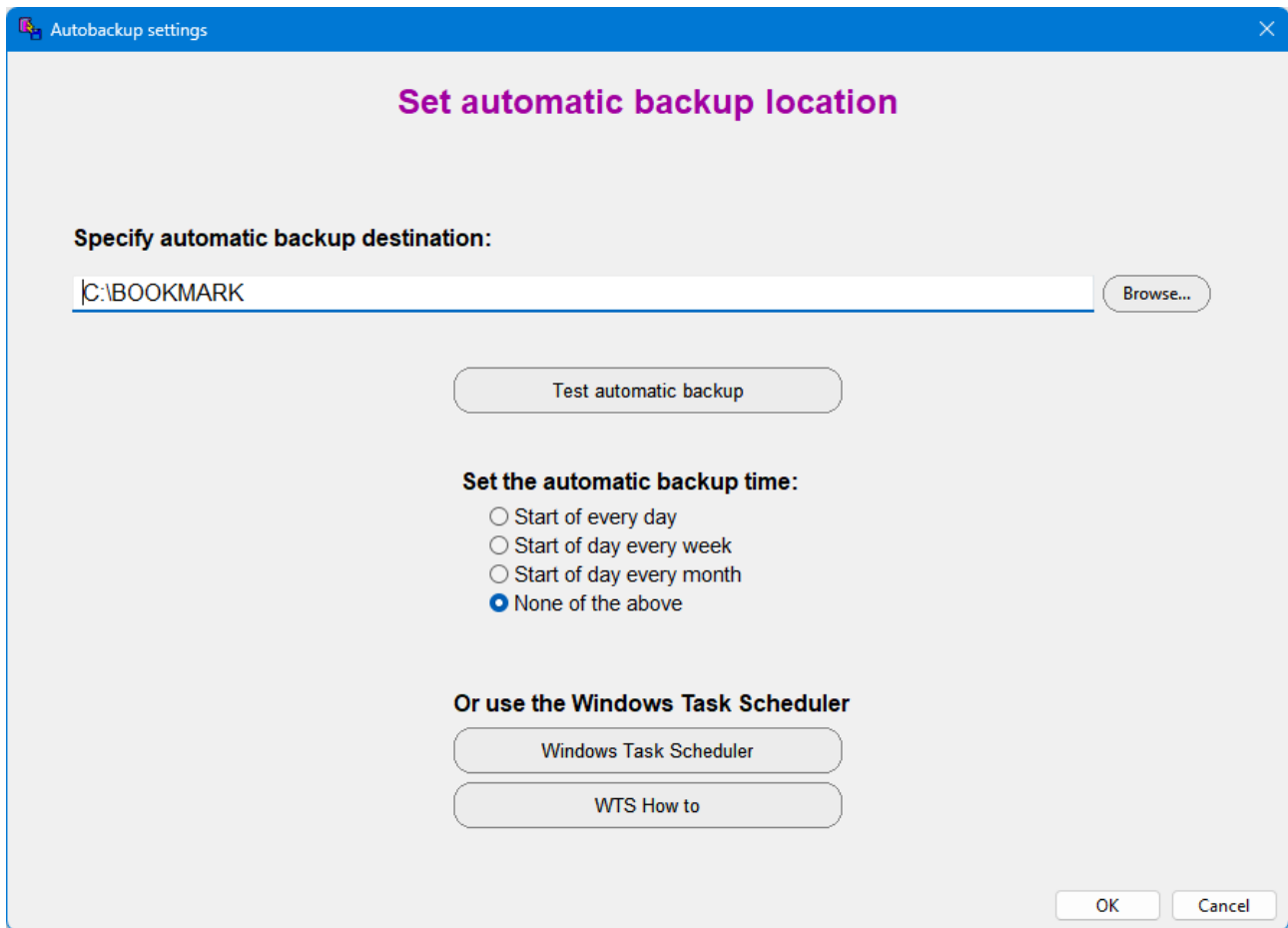Click on Browse. If available, OneDrive will be listed.
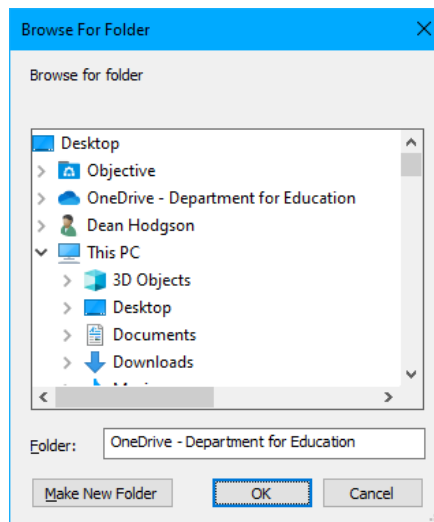
Click on it then OK. The path is lised. Click OK to save.

OneDrive will then appear in the External Locations list.

Remember: ***BACKUP! BACKUP!! BACKUP!!!***

Automatic Backup

Bookmark can be set to automatically perform a backup at a specific time to a specific location.

This window is used to specify the automatic backup destination. It can be Bookmark's location or elsewhere. An "external location" is strongly recommended. It can be OneDrive.

The "Test automatic backup" option can be used to see if this backup is working.

The Bookmark-enabled time happens in the morning.

The "Windows Task Scheduler" is used to set up another time when the backup will be performed. The only necessity is that the computer must be turned on at that time.

"How to schedule automatic backup" is a document which contains information on how to set up the Windows Task Scheduler to perform the backup at the correct time.
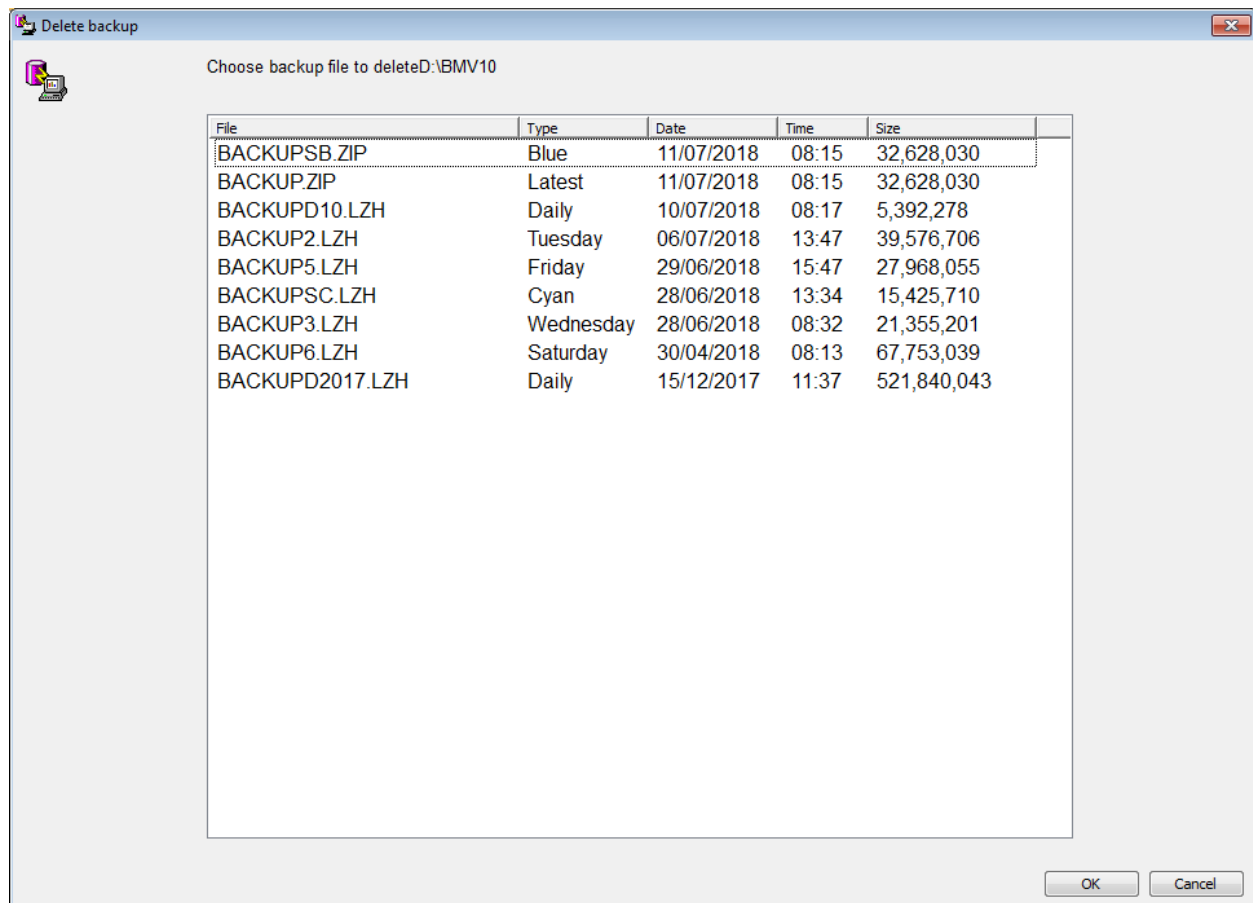
Delete Backup

Backup files at Bookmark's location accumulate. There is one for every day for a month, one for each day of the week, the latest, different ones for each colour, plus the start-of-month backups. Even though these files are overwritten by newer backups, it still amounts to over 40 backup files.

Use this option to delete very old backup files that should no longer be accessed.

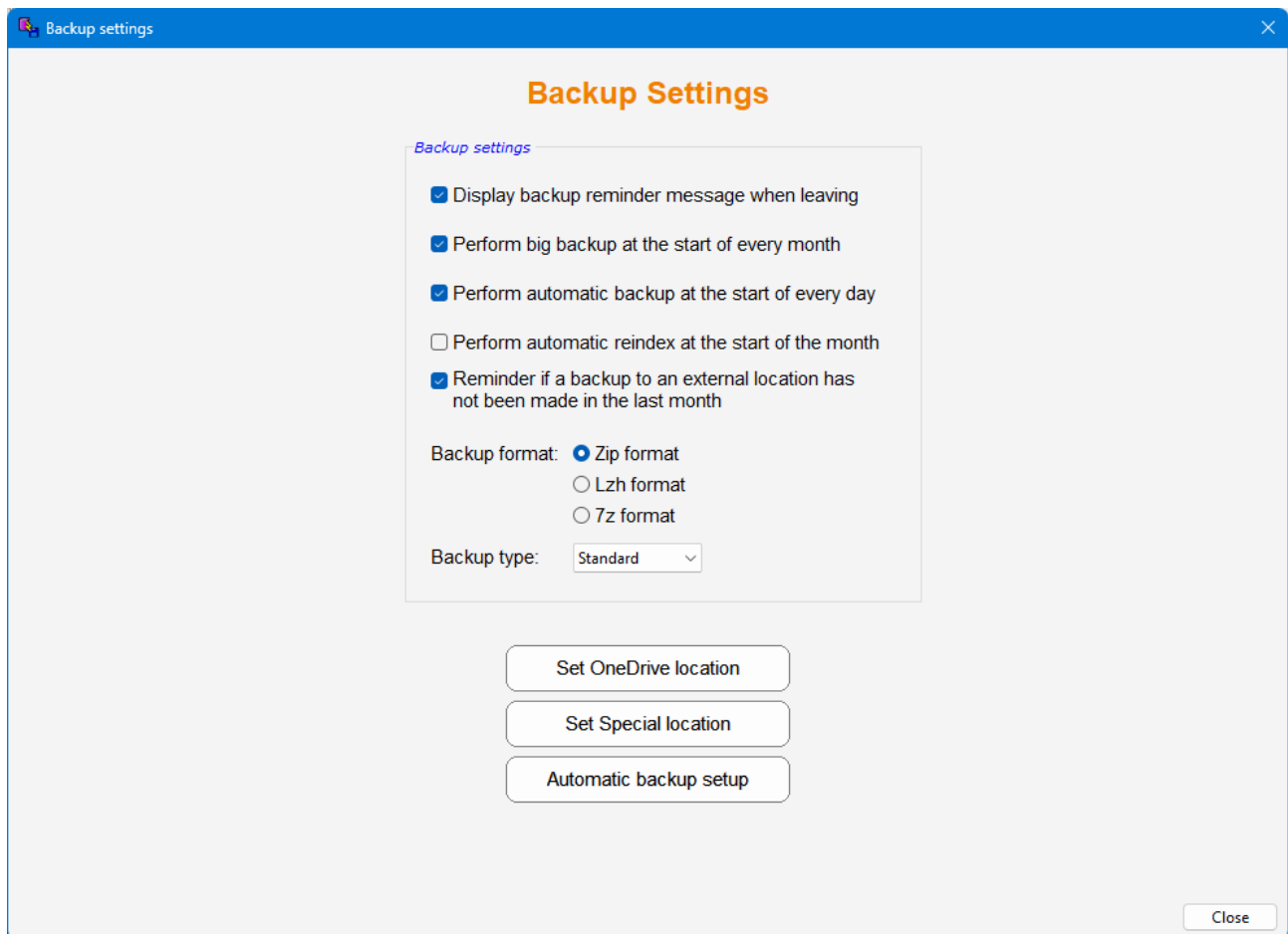Place the dot next to "Delete Backup" then click on either External Drive or Bookmark's Location.

Click on the backup to be deleted to highlight it.
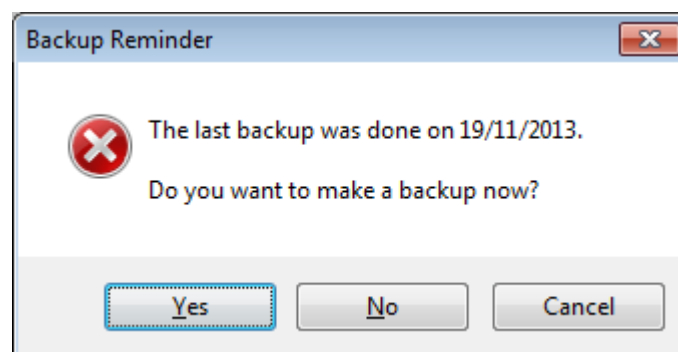

Click OK to delete.

Backup Settings

The Backup Settings button on the Backup window can be used to change defaults.

Backup Reminder

If the first checkbox is ticked, a reminder message to make a backup appears when closing Bookmark. Remove the tick if you do not wish to be reminded to make a backup when closing Bookmark.

Monthly

If this box is ticked, Bookmark will automatically perform a backup to its own location at the beginning of every month. Up to 12 monthly backups are kept. Each month's backup is overwritten by the following year's month. By default, this control is active.

Daily

If this control is ticked, Bookmark will make an automatic backup to its location at the beginning of every day. Morning backups are overwritten the following month by a backup of the same day. This ensures a minimum of one month's backups are available for emergencies. Very strongly recommended.

Backup format

By default, Bookmark uses the ZIP format. This control allows switching to the older LZH format or the high-compression 7zip format. It can be much slower than the others but the resulting backup file is also less than half the size.

If you have problems making a backup, changing to another format may help. Example: if the LZH format backups are producing error messages, change to ZIP.

A Proven Backup Strategy

The purpose of a backup is to safeguard your data in case of computer failure, theft or damage, or malicious intent.

With a proper backup to an external destination, it is easy to install Bookmark onto another computer and restore the data.

Bookmark's backup has been designed to store up to *one week's backups* to an external location.

Each backup is labelled to match the day of the week. Therefore a week's backups can be made to one flashdrive before Bookmark would overwrite them.

A "two flashdrive" backup strategy has proven useful, although others can be invented and followed, too.

One USB flashdrive is labelled Week A and the other Week B. All backups for an entire week are made to one flashdrive. The next week, backups are made to the other flashdrive. Then they are swapped every week.

Backups can be made to "Bookmark's Location" during the middle of the day or other times when an external backup is not required. Doing multiple backups during the same day overwrites the previous backup.

Extremely important!
Do not rely on backups to Bookmark's Location only! This is putting all of the eggs in one basket.

The time when a backup is needed will be the time when the IT person – who knows how to restore from a server backup – will not be available.

Server backups can also suffer from problems such as drive failure, change of staff, malware, etc.

In addition, an extra USB flashdrive can be used to store an end-of-year backup called an "Annual Backup". This backup includes text data as well as book cover images, borrower images, icons, sounds, etc. It can be made at other times, too, but there is only one backup file produced. A copy is left at Bookmark's location as well as the destination.

A "monthly backup" can be made every month to update the backup of images. This can be done to the same flashdrive as the daily backups or to a special flashdrive.

Remember: ***BACKUP! BACKUP!! BACKUP!!!***