Backup & Synchronize datas

Why backup data? …

- The data stored in our computers are increasingly important, photos and family movies, declaration of taxes, certificates of any kind, duplicatas of official documents etc…
- Nobody is immune to hardware problems, an handling error or a malfunction of the electrical circuit.
- Synchronization of data is very useful when traveling or use of computer in mobile mode.

To **preserve your data**, you will find several softwares that allow you to save, to synchronize or to view your data and retrieve them when necessary.
Each software is specific in its use and functions. You should find one that fits your requirements.

Remember : to install softwares on HandyLinux, the easiest way is to use the Software Center via HandyMenu > Raiders > Software Center.

Choice of backup media

Data backup used to be on diskettes, then on CD and then on DVD. Although you can stil use this kind of support, technology allows you to have access to much larger and cheap storage capacity.
Depending on the size of your data backup, you will find external hard drives ranging from 1GB (USB type) to 2TB (2000GB) self-powered (directly by the USB plug) or with external power supply. Prices vary between 4€ and 150€ depending on the capacity..
Of course, if your data fit on a CD (700MB), you can use a CD-RW (rewritable cdrom) for your backups.
You can also save your data on a remote server like *cloud* or *dedicated server*.

The softwares listed here offer you all the choice of backup media.

Graphical software

"Déjà Dup" Backup

"Déjà Dup" is a **simplified backup tool**. It allows you to build secure backups of your data to a local folder, an external drive, or a local network either remote or "cloud" type.
It also allows the **full encryption** and protection by **Password** of your backup.
"Déjà Dup" has a very clear interface and does not require any computer knowledge.

"Déjà Dup" is good enough for a backup of your data. However, if you want to "backup your system", including your applications or your whole installation, you need to go through a little more complex software described in the following chapters.
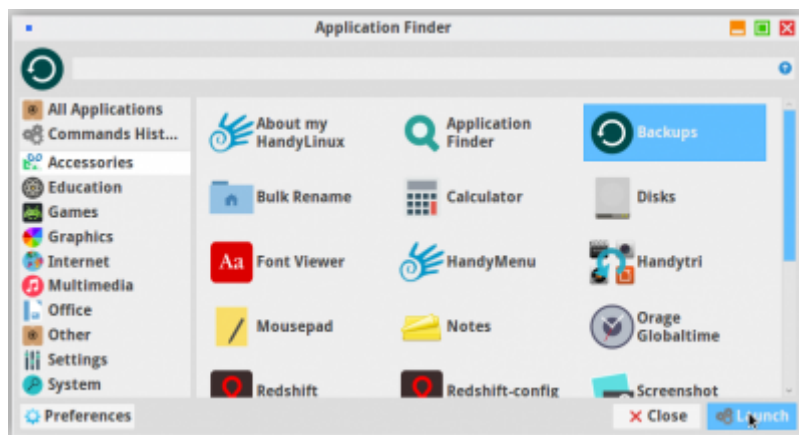
Installation

To install **"Déjà Dup Backup Tool"** go to HandyMenu > Raiders > Software Center. In the search box, simply enter "Deja Dup" to display the software. Then click on "install" to get "Déjà Dup".
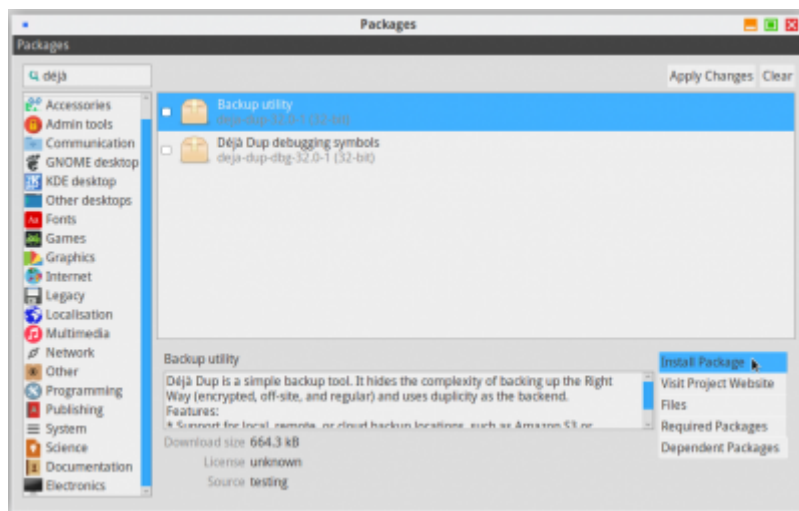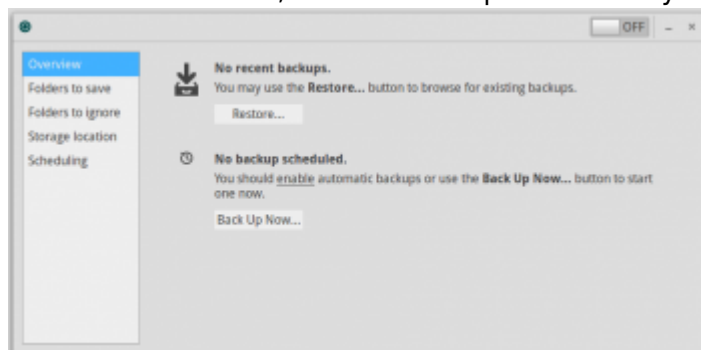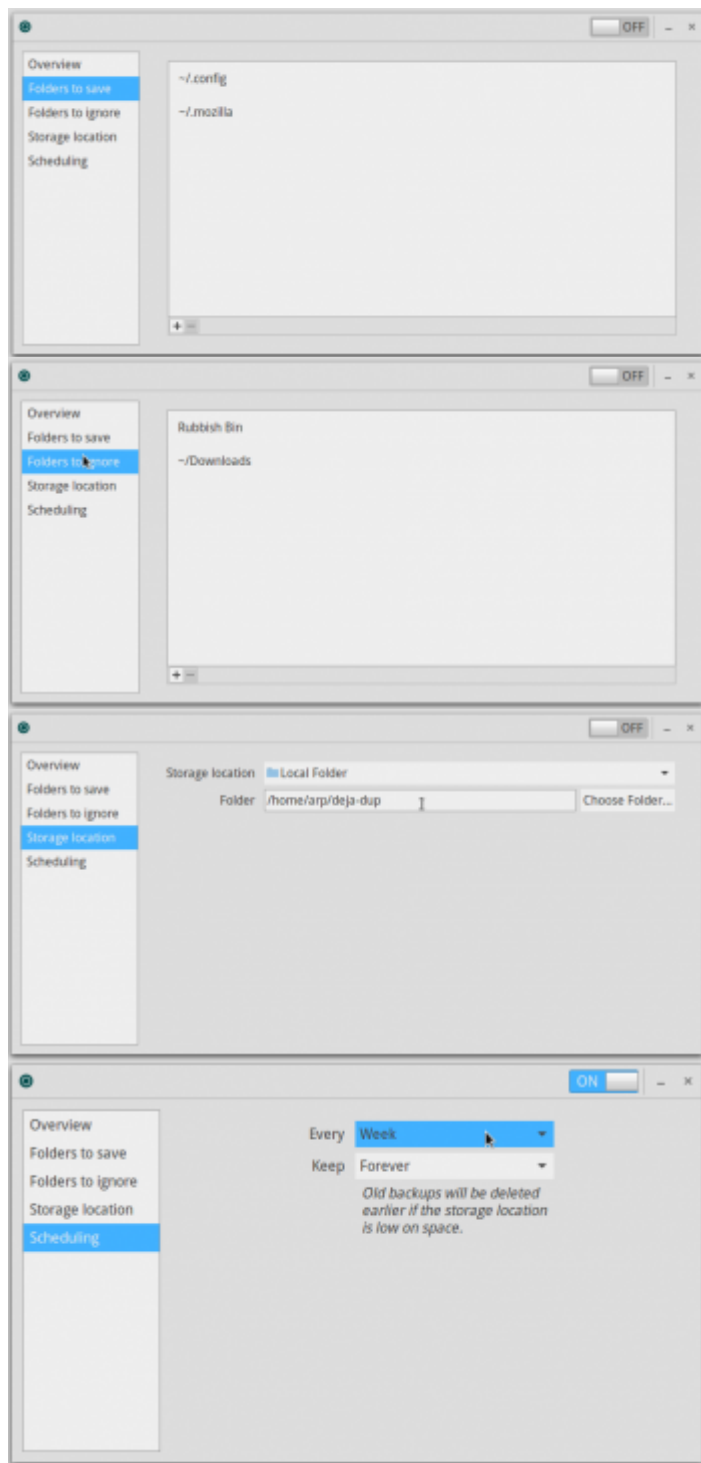

Using Déjà Backup

"Déjà Dup" is now available in the Applications list, see "Accessories" > "**Backup**":

At **first launch**, a minimal interface prompts you to restore a recent backup or to go direct to your backup settings.
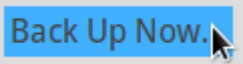**Backup Settings** allow you to select the automation of the backups, the location of the backup files, the files to be saved, and the backup execution cycle:
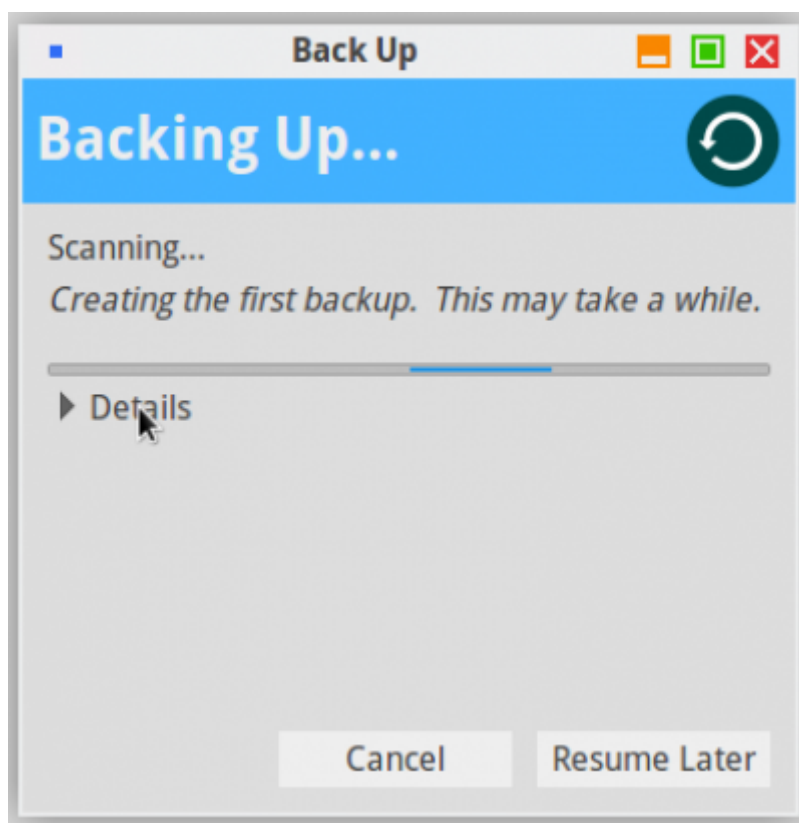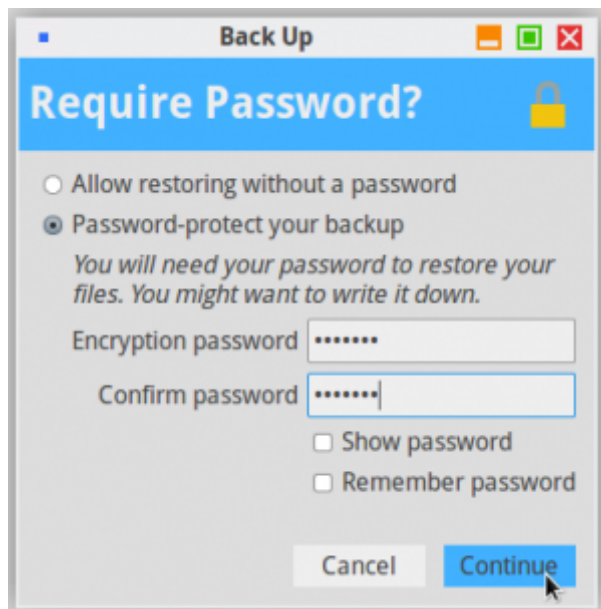
Backup your data

Once your settings done, **start the first backup** clicking on **"Backup Now"** button of the

"Overview" tab. [Back Up Now.]

The first backup will be shorter or longer depending on the size of data to backup. Subsequent backups will be faster because they save only the files/folders that have been changed.
The password option choosen during settings allows entire encryption of your backup:
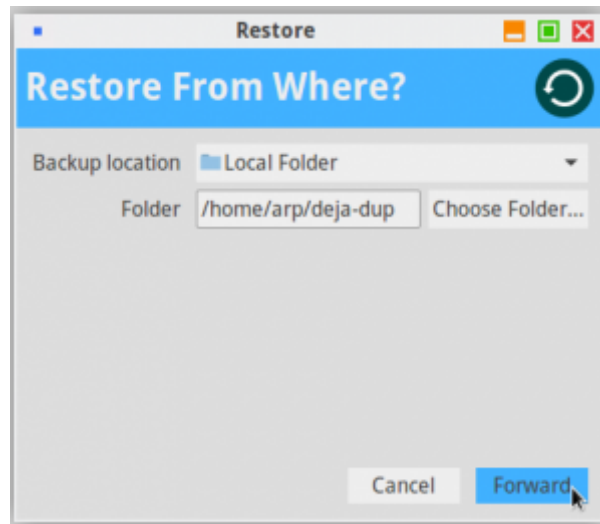
Restore your data

To **restore a backup** on a newly installed system, just install **"Déjà Dup"**, then choose "Restore" in
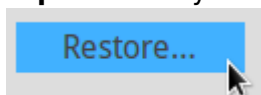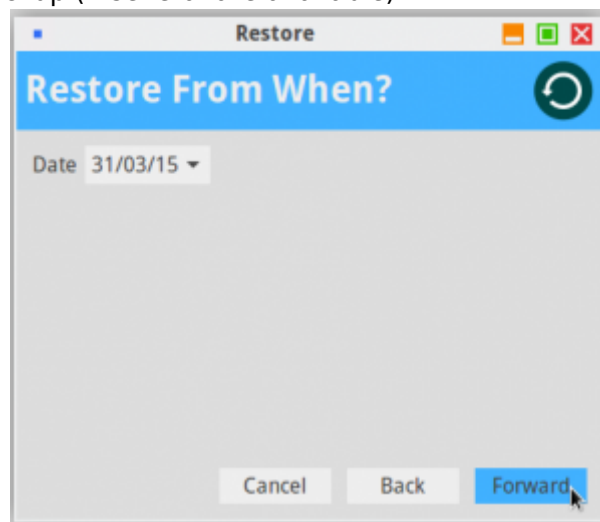

the main window.

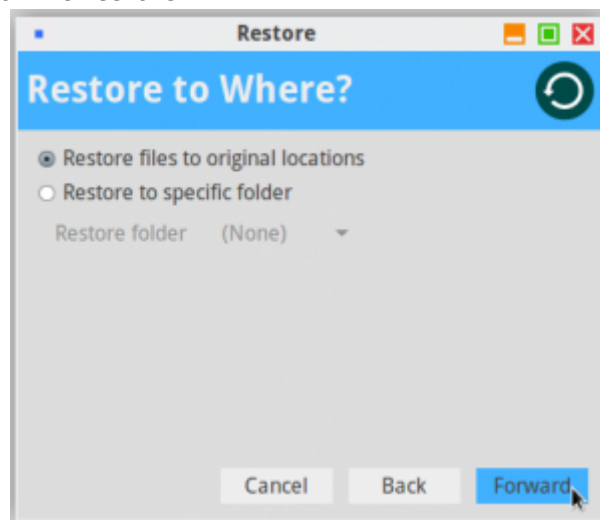A serie of simple windows will help you find and restore your data:
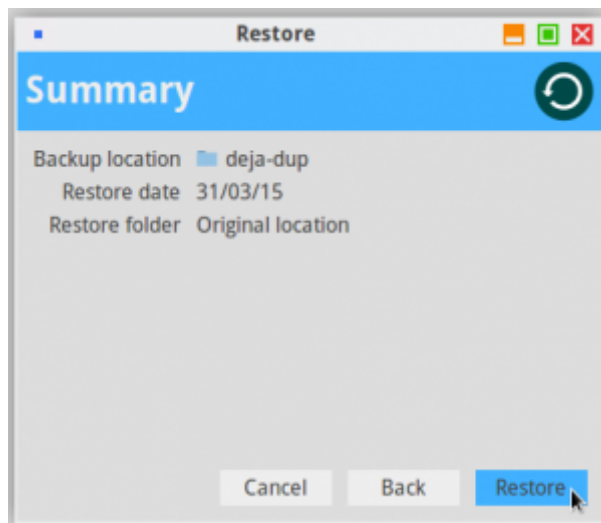
- Define the location of the backup to restore:

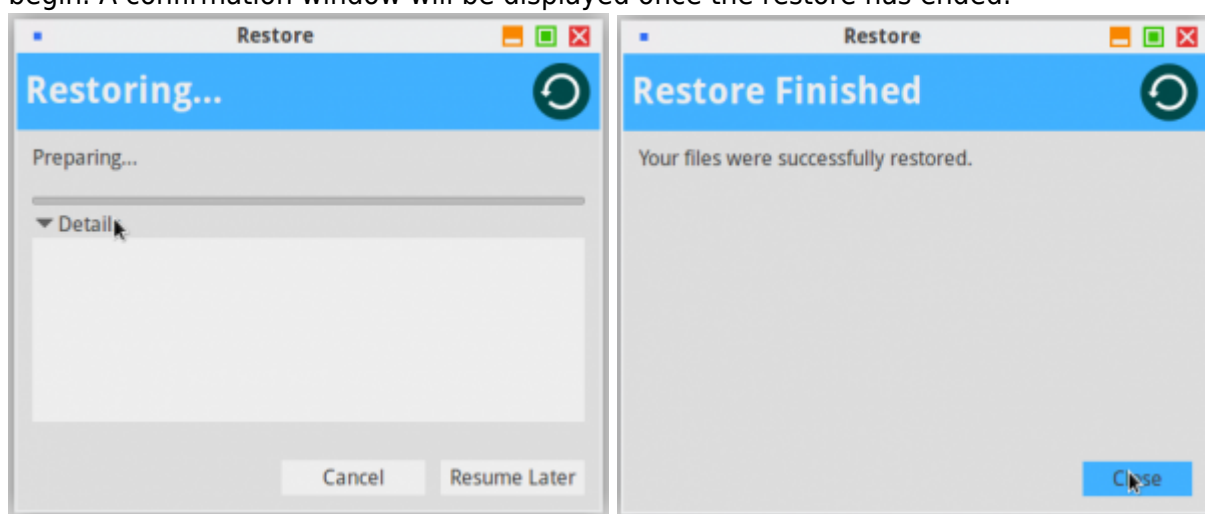- Define the date of the backup (if several are available):

- Define the location "To" of the restore:

- Confirm the restore mode:

- If the backup was encrypted, the password will be requested, then restore of your data will begin. A confirmation window will be displayed once the restore has ended:
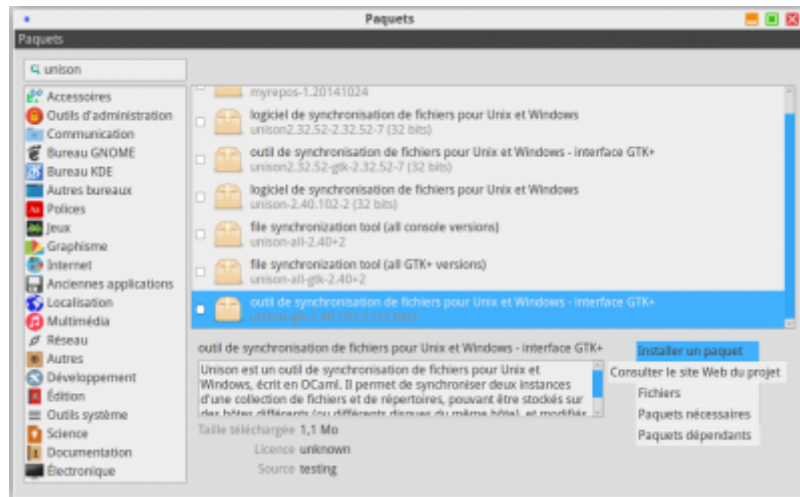
Unison

Unison is a powerful **bidirectional synchronization** software that uses the **principle of profiles**.

Synchronization implies that if one file is modified in one of two folders, it will be also changed in the other folder at next synchronization.
The **profile** is a configuration file for a given synchronization. It contains directories to be synchronized and options. **Unison** will apply this profile every time the program is launched. This principle allows to configure and perform different types of backup from the same software.
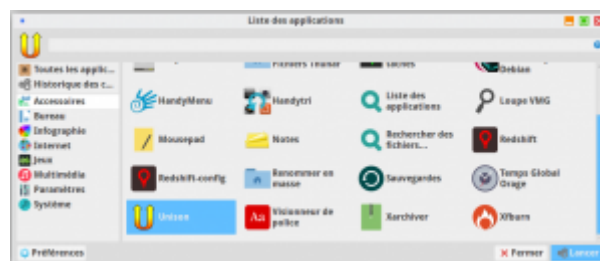
Installation

To install "Unison" go to HandyMenu > Raiders > Software Center. In the search box, simply type "unison" to display the software. Select the *GTK* version then click on "install" to get Unison.
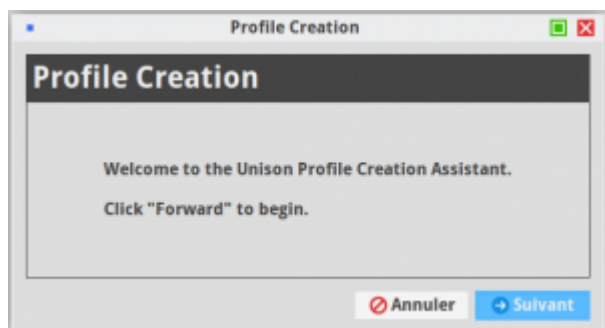
Using Unison

"Unison" launches from the Application List, section "Accessories":

Add profile

1. **At launch**, "Unison" displays the window to select the profile. Just click on the "Add" button to start the setup wizard :
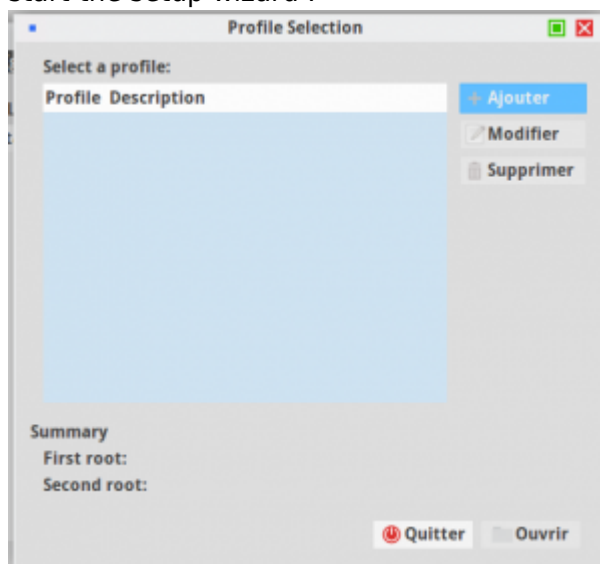

The steps of the setup wizard

1. **Profile Description:** you can define a name and description for your profile. Choose explicit terms, it will be easier to manage if you have multiple profiles.
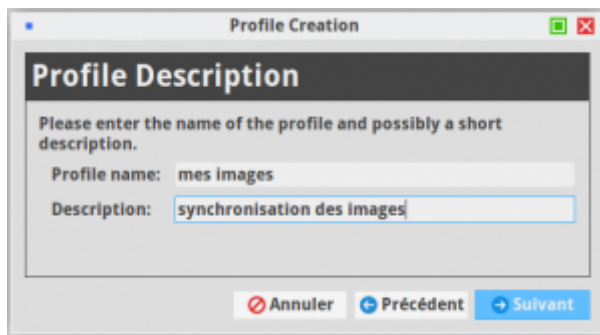
2. **Type of synchronization:** you can define the location of the backup: local (an other partition, an external drive) or remote (server of a local or remote network). Example: To synchronize your external drive choose "Local":
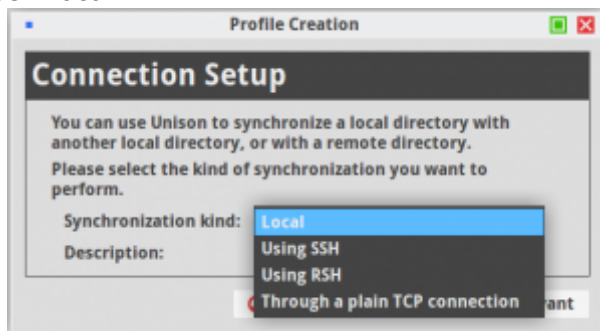
3. **Select folders to synchronize** "First directory" indicates the folder on your computer, "Second directory" indicates the folder (local or remote) to synchronize.
Use the drop down menus to select your folders:

4. **Options FAT:** if your external drive is partitioned in FAT16/32, check the box in this window:
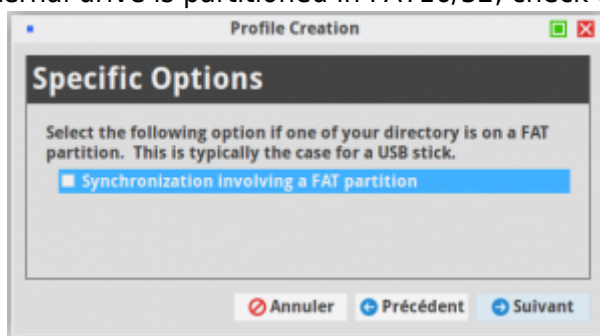
5. **Profile Creation:** the wizard informs you that your profile is filled up, you now click on "Apply" to create it:
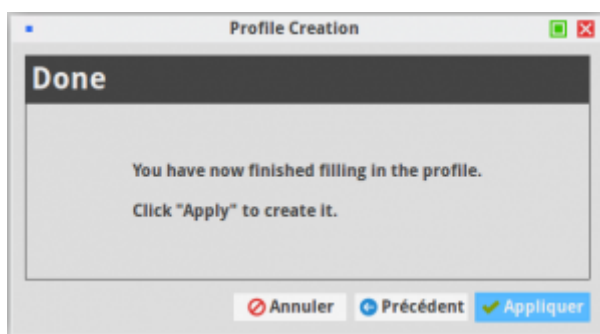
6. **Profile Summary**: back to the profile selection window, your profile "images" is present and you can verify the folders to be synchronized:
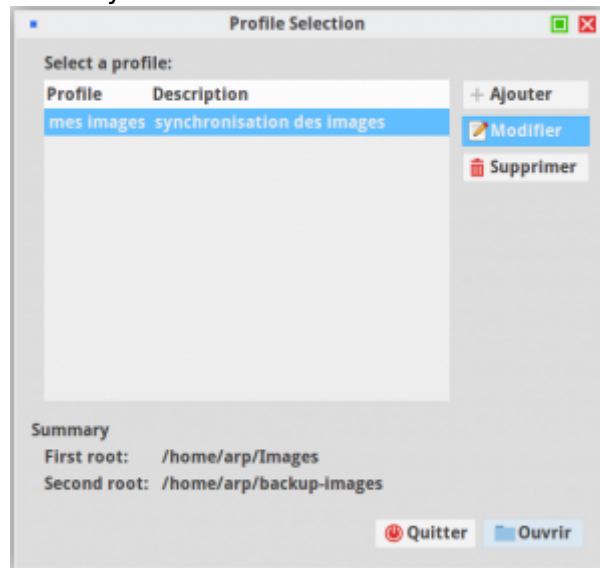
Data synchronization

First synchronization

In the Profile selection window, select the task to be executed and then click "Open.".
During the first synchronization, one of the two folders is empty… and this is normal. "Unison" will therefore show you a big window to warn you. Click on "confirm" to start the first scan of your folder to be synchronized:

After the warning is accepted, "Unison" scans the folders and displays the first synchronization:
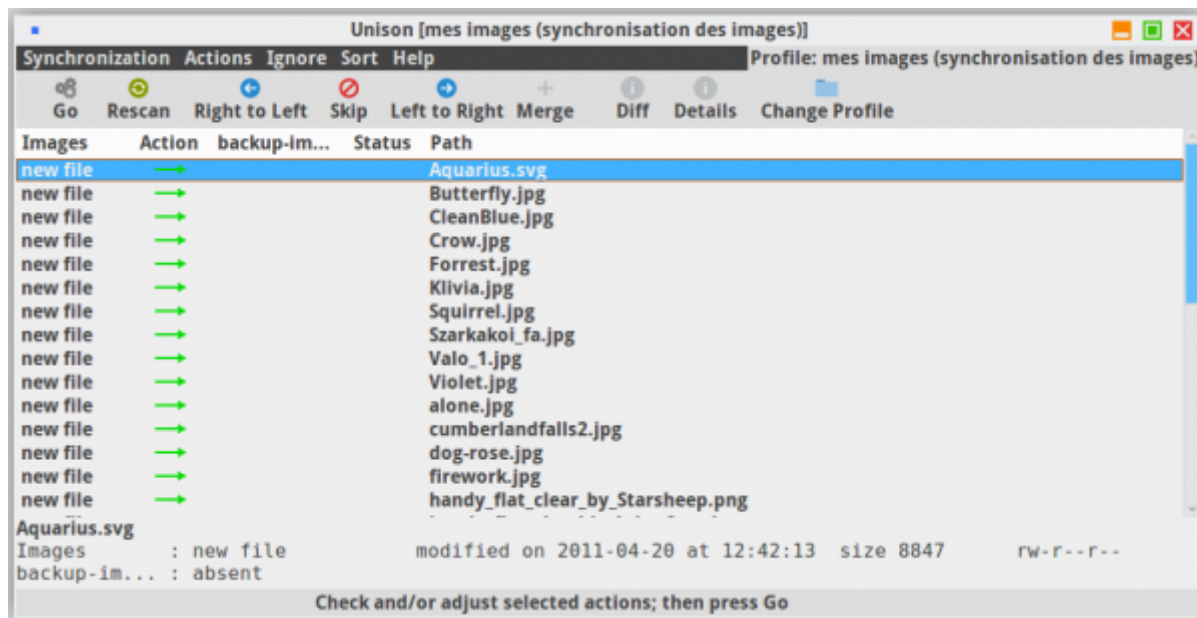
Interface window description:

1. The menu bar gives access to all the possibilities of "Unison",
2. The toolbar contains the main "Unison" actions,
3. The main window displays the files affected by the synchronization. In our example, as it is the first synchronization, all files are affected:
   - Left column: Your local folder
   - Action column: indicates the direction of the synchronization (newest to oldest)
   - Column "Path": indicates the remote folder

note : First line shows a red cross as the concerned folder "wallpaper" is a symbolic link to a file system. "Unison" does not follow symbolic links.

Start synchronization

In the toolbar, click on "Go" to start synchronization:
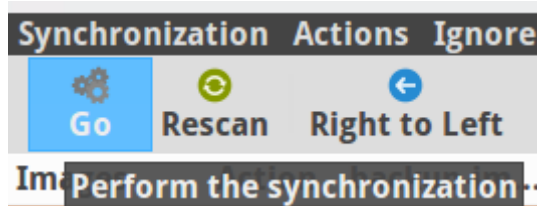
The execution time depends on the volume of data to be synchronized. At first action, it may take long, but during the next synchronization only modified files will be copied … and will go much faster:
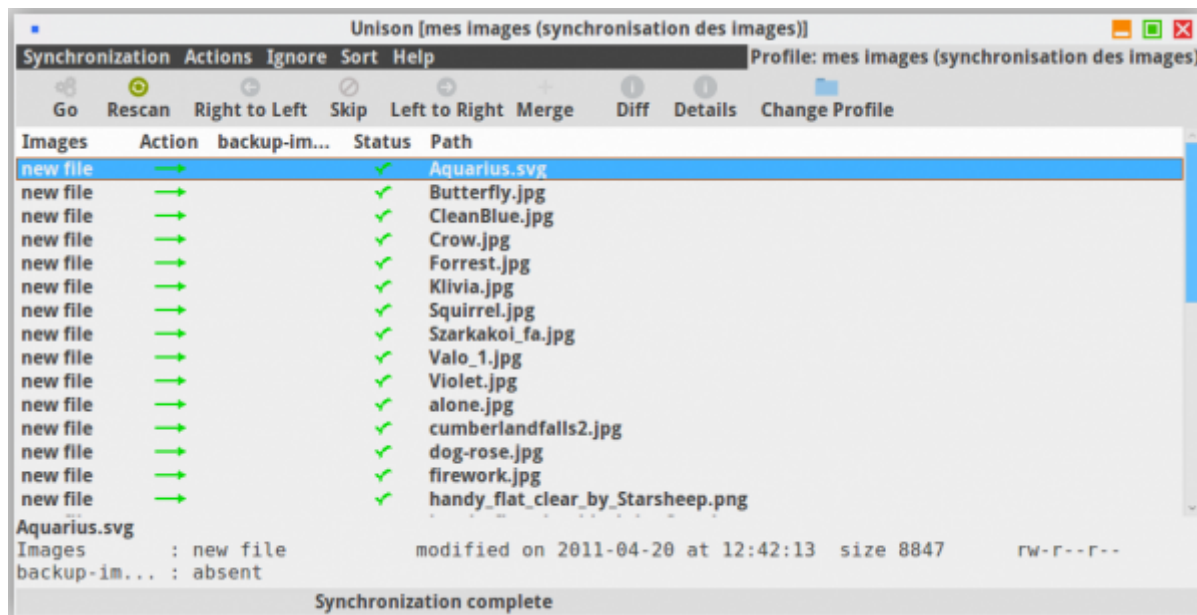
Your two folders are now synchronized. Any file changes in one or the other folder will result in a modification of his brother - synchronized file.

You can, however, during the next synchronization, overide the default behavior of "Unison" using the toolbar; you will be allowed to ignore certain files ("Skip" button), or decide to completely ignore a file using the menu "Ignore".

As said in intro, "Unison" is very powerful and has a bunch of options that are not useful for simple domestic synchronization.

The manual method

If you want to backup only one file or few files, and they do not weigh more than 4GB, you can simply use your archive manager.
This manual method is reserved for "real" archives. Subsequent viewing of the data will involve the complete decompression of the archive.

From your "Thunar" files manager, select the folders to back up, then right-click on the selection, choose "Create an Archive…".
Then you move the archive to an external media.

Cloning the system

The full and secure solution to backup your datas: cloning your hard drive :

Clonezilla Live is a Live CD based on **Debian GNU/Linux** distribution and including the **Clonezilla2** software. Here are some features:

- <u>backup</u> : clone a single computer's storage media, or a single partition on the media, to a separate medium device. The cloned data can be saved as an image-file or as a duplicated copy of the data. The data can be saved to locally attached storage device
- <u>restore</u> : The clone file can then be used to restore the original when needed (same HDD, external HDD, other computer, USB key, network, etc.)
- <u>copy</u> : direct datas copy from the original disk to another disk

This release can connect to any server : SSH, Samba, NFS system

As indicated in its name, the principle is that the Live CD (CD-ROM or DVD-ROM), but it can also be run from a USB drive, external hard drive, etc..

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