

# Ecology moves of US

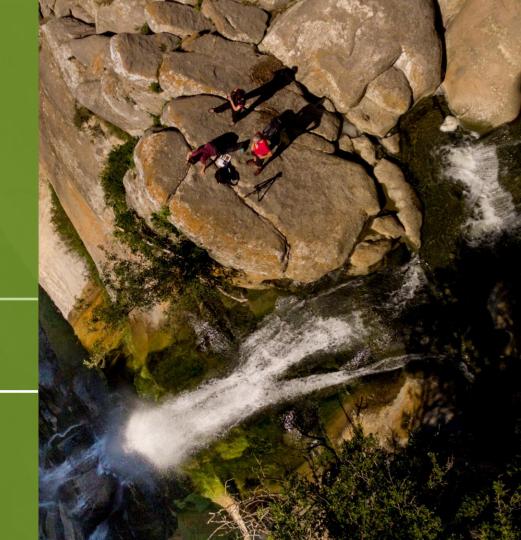


Back-up and synchronization strategies to keep copies of your computer files

Roberto Molowny-Horas

**CREAFuture talks** 

CREAF, February 17<sup>th</sup> 2022





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- 2. What is backup/synchronization?



3. Examples of software: Cobian 11, Resilio Sync, OneDrive



A horror scenario: half-way your research work (e.g. PhD), a harddisk crash, computer virus attack, operating system problem or another catastrophic event makes some or all of your files unavailable!





#### A horror story

- If it is a software problem, try using specialized tools.
- If it is a hardware problem, hire someone to fix your hard-disk, if it can be fixed.
- If nothing works...









# Best solution: prevent that from happening by keeping an updated copies of your files!

Let this be our take-home message



There are two basic ways to make and keep updated copies or your files and/or folders:

- 1. Back-up your work onto another device or the cloud.
- 2. Synchronization between two (or more) computers.

Example software	Back-up solution	Synchronization solution	OS
Cobian	Yes		Windows
Resilio Sync		Yes	Windows/Linux/Mac
Microsoft OneDrive	Yes	Yes	Windows



Three basic types of back-up copies:

- 1. Full
- 2. Differential
- 3. Incremental

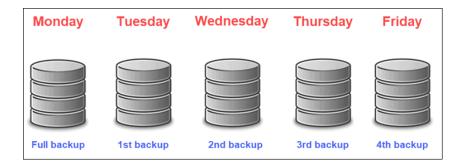
Which ones are you going to need?

## What is a backup copy?



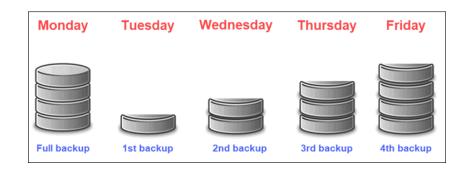
**Full**: each time we make a backup, a full copy of all our files is performed

- Advantages: easy to set up, each copy is a fixed "photo" of all your folders.
- Disadvantages: unefficient, slow to copy, memorydemanding.



**Differential**: only files that differ from last **FULL** copy are copied

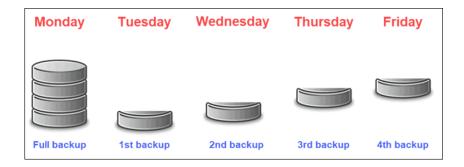
- Advantages: relatively easier to get files back.
- Disadvantages: still unefficient and slow (though not as much). It needs a full copy to be made first.





**Incremental**: only files that differ from last back-up (full or otherwise) are copied

- Advantages: memory-efficient and fast
- Disadvantages: harder to get old files back. It needs a full copy to be made first.





- Two directories in two different computers work as "mirrors".
   Updates in one (new files, modifications of old ones...) are reflected immediately in the other one.
- There must be a connection between the two.
- If versioning is implemented, wrongly-deleted files in one computer can still be recovered.



Typically, you may copy your files over to:

- 1. the same computer (discouraged!)
- 2. another computer or external hard drive
- 3. the cloud





### **Cobian 11 backup software**



#### https://www.cobiansoft.com/cobianbackup.html

- External hard disk
- Completely free
- Settings are somehow complicated
- Easy to run
- Can make back-ups regularly

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## **Resilio Sync synchronization software**



#### https://www.resilio.com/

- Free for basic home use (enough most of the time).
- Relatively easy to set-up (long key must be shared by the two computers).
- Can sync any two folders.
- Keeps older versions of the same file as long as we will.
- May have problems with some firewalls.

#### **Resilio Sync synchronization software**



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#### **Resilio Sync synchronization software**



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## **Microsoft OneDrive software**



https://www.microsoft.com/es-es/microsoft-365/onedrive/online-cloud-storage

- Full of options.
- Subscription for anything but basic use.
- Can do both back-up (to the cloud) and synchronization.
- Only synchronizes folders that are located under the "OneDrive" main folder.

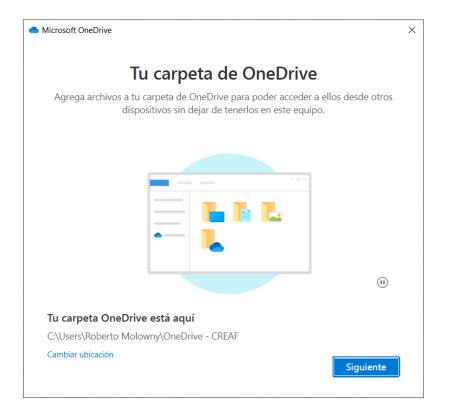
#### **OneDrive**





#### **OneDrive: syncing two folders**





#### **OneDrive: backing-up folders**



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#### How to choose



- 1. Am I keen on paying a monthly/anual subscription?
- 2. Can I count on always having a reliable internet connection?
- 3. Do I have another computer/external hard-disk to make copies to?
- 4. Do I expect to have to recover old files very often?
- 5. Am I planning on using and building huge files all the time?
- 6. Am I concerned about having copies of all my work on a server somewhere else, managed by a private company?
- 7. Can I accept a relative degradation of computing performance by having a client application running always in the background?
- 8. Is the software easy and straightforward to set up?
- 9. Are I worried about computer viruses or malware?
- 10. Other questions?

#### Last, but not least!



For VERY important documents, like a PhD thesis, a book, etc, it is not a silly idea to use the old and humble:

# **PRINTER!**

That is, make regular paper copies of full chapters or parts of the document.





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