Synchronization software.

What is the synchronization? Synchronization is a kind technology of reserve coping of necessary data or information. Nowadays it plays great role. It's like a kind of backing up your files, such as personal documents, photos, and videos, will protect them from being lost as a result of accidental deletion, an operating system crash, viruses, or damage to your hard drive.

If we consider computers or mobile devices, synchronization can be understood as a set of algorithms that allow storing information objects in the same state on different devices and at different time intervals, even if changes are made in the same source. In short, if at least one of them is changed, it affects all the other related data as well. On the other hand, syncing can be called displaying or using the same data on different devices at the time of communication between them.

The plus of synchronization is the sync of your files between multiple computers. For example, you can work with the same files at home and at work, and you need the files on your home and work computers to be updated as they are changed, created, or deleted. It also works with photos or videos on mobile devices. As the Apple or Xiaomi companies have: ICloud and Mi.Cloud. I.Cloud and Google Photos have photos and videos synchronization.

Also regularly synchronization of your files can make it much easier to restore your computer in the event of a crash. You will only need to restore the operating system image, and all the files are already securely saved in a backup copy and you will not have to spend a lot of time and effort to restore them.

Another example of data synchronization is that database replication is used to synchronize multiple copies of data with database servers that store data in different locations. Or the clocks, if one minutes in the region left clocks in a different parts of our world should show the same changes of time…

There are three main types of backups: full, incremental, and differential. All three have their advantages and disadvantages.

Full backup.

A full copy is exactly what the name implies: it is a full copy of your entire data set. While full backups may provide better protection, most organizations only use them on a periodic basis because they are time-consuming and often require a lot of disk or tape space.

Incremental backup.

Incremental backups were introduced as a way to reduce the amount of time and disk space required to perform a full backup. Incremental backups only back up data that has been changed since the previous backup.

The main drawback of incremental backups is that it can take a lot time to restore them. More that, if any of the backup media is missing or damaged, you will not be able to perform a full recovery and data recovery.

Differential backups

A differential backup is similar to an incremental backup. The difference in incremental vs. differential backup is that, while an incremental backup only includes the data that has changed since the previous backup, differential backup contains all of the data that has changed since the last full backup. The advantage that differential backup offers over incremental backups is a shorter restore time. When speed is important, such as in a disaster recovery scenary where time is so important, quick restores can be crucial. Restoring a differential backup never requires more than two backup sets. Incremental backups, on the other hand, could require a lot of backup sets.