

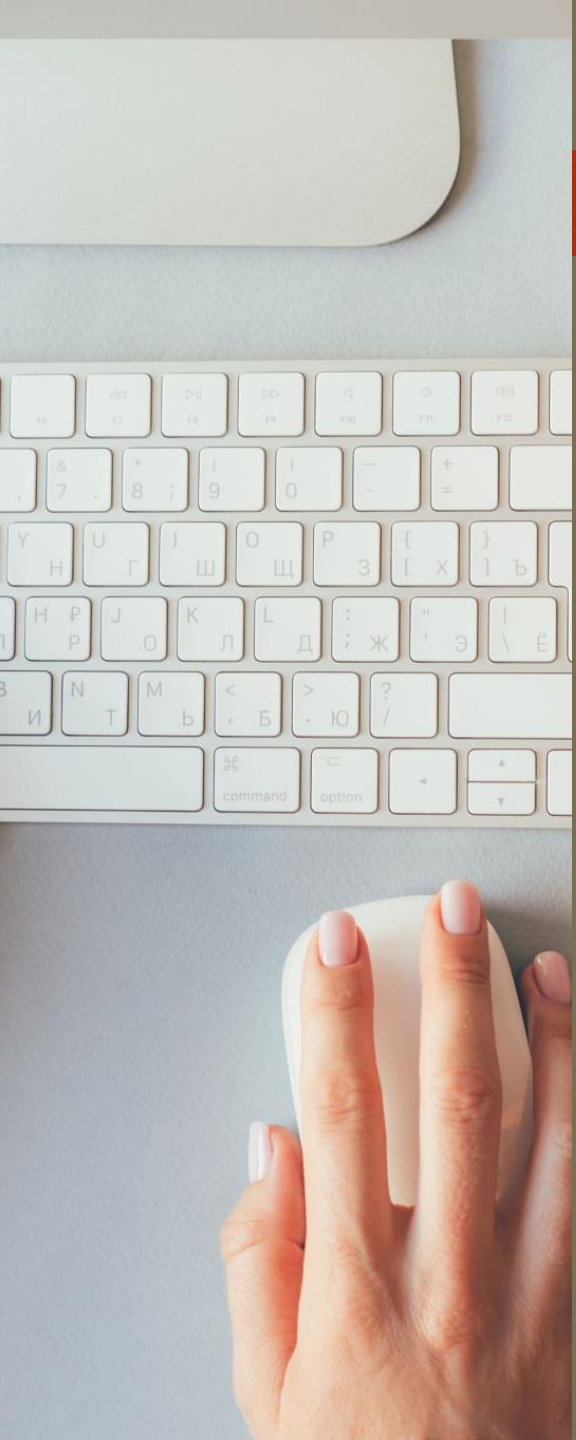
How to Backup
your Computer
The Complete
Guide to
Computer Backup
<https://www.backblaze.com/backup-your-computer.html>





Introduction

- Introduce the importance of computer backups.
- Highlight potential risks: hardware failure, data corruption, malware, accidental deletion.
- State the objective: To provide a comprehensive guide to backing up your computer effectively.



Backing up your computer

- Who should backup their computer
- What files should you backup
- When or how often should you do it
- Where should I backup the files
- Why



Why You Should Backup Your Files

In today's fast-paced world, backing up your files is of the utmost importance.

Typically music, movies, films, data files, projects, and photos are all stored in one place – your computer.

Laptops and desktops have decreased in cost, and the amount of storage inside them has increased greatly over the last few years.

Unfortunately having all of your data in only one place is dangerous.

Why You Should Backup your Files



Computer loss, theft, natural disaster, and accidental deletion, are just some of the ways that you can lose the data you've spent so long creating and accumulating.



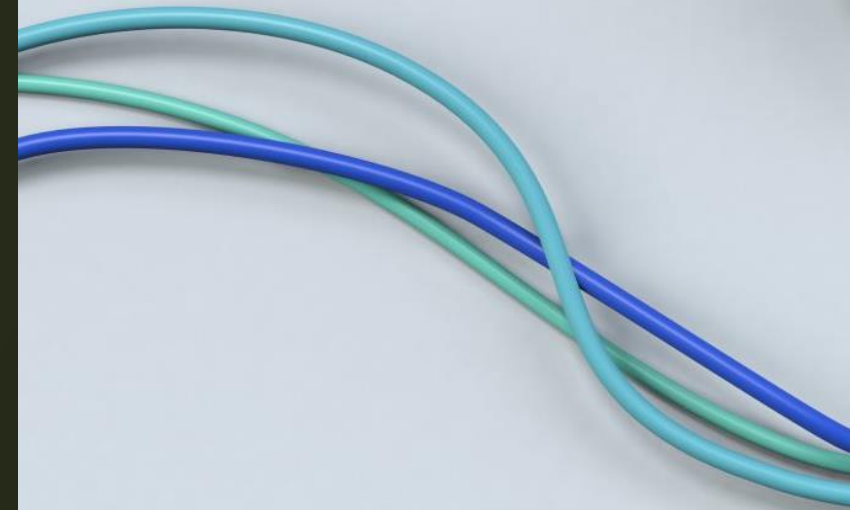
The only way to prepare for the unexpected is to have a good backup strategy in place.



There are many different ways to backup your computers, and using multiple forms of backup will minimize the risk of ever losing your valuable files.

Types of Backups

- **Full Backup:** Copy of all data, time-consuming, comprehensive.
- **Incremental Backup:** Copies only changes since last backup, quicker, less storage.
- **Differential Backup:** Copies changes since last full backup, balance between full and incremental.
- **Cloud Backup:** Offsite storage using services like Dropbox, Google Drive, etc.
- **Local Backup:** External hard drives, network-attached storage (NAS), etc.



What is a Computer Backup?

- ▶ The simplest definition of a computer backup is an exact copy.
- ▶ In the case of computer files, we are referring to copies of the original files that you have on your laptop, desktop, or external drive.
- ▶ Creating a backup of original content means having that data saved in two places, but it's also important to make sure that those two places aren't on the same type of device.
- ▶ For example, if you have 3 copies of a working document on your computer, if your computer crashes, you will still lose all three.
- ▶ This makes the backup method and medium, an important thing to consider for your backup strategy!





Backup Methods

- **Manual Backup:** User-initiated, requires discipline, prone to forgetting.
- **Scheduled Backup:** Automated at specific intervals, consistent protection.
- **Continuous Backup:** Real-time syncing, minimal data loss risk.
- **Versioning:** Keeping multiple versions of files, helpful for recovery.



Choosing Backup storage



External Hard Drives: Portable, reliable, vulnerable to physical damage.



Network-Attached Storage (NAS): Centralized, accessible by multiple devices, network-dependent.



Cloud Storage: Convenient, offsite, potential data privacy concerns.



Can I Use Thumb Drives for Backup?

Technically, yes. In most cases, a simple thumb drive (or flash drive) is the first way most people save their data.

Thumb drives are easy to transport, work with most computers, and are relatively small.

That makes them a great way to save small amounts of data like presentations or working documents.

It's also easy to give them to others, making them great for collaborative projects.

You can use a thumb drive but...

- The downside to thumb drives is that they are usually very small and often are not very dense (meaning, they cannot store a lot of data).
- This makes them problematic for a few reasons.
- If your thumb drive is small it's easy to lose.
- If you lose your thumb drive then you're no longer backed up!
- Not having a lot of storage density is also problematic, as typically a thumb drive will not be able to hold all of the data that is on your computer.
- For all of those reasons thumb drives are not an ideal solution for backing up your computer.





Backup Software

- **Built-in Tools:** Windows Backup, Time Machine (Mac), basic functionality.
- **Third-Party Tools:** Acronis True Image, Carbonite, Backblaze, feature-rich options.



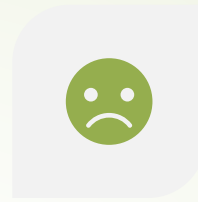
Setting up a backup

- **Step 1:** Decide on backup type (full, incremental, etc.).
- **Step 2:** Choose storage medium (external drive, cloud, etc.).
- **Step 3:** Select backup software and install if needed.
- **Step 4:** Configure backup settings (schedule, files/folders to include).
- **Step 5:** Initiate the initial backup.

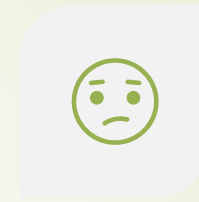
So How Should I Backup My Computer?



IF IT SOUNDS OVERWHELMING AND COMPLICATED, THEN YOU'RE STARTING TO UNDERSTAND THE COMPLEXITY OF THE PROBLEM.



THAT'S THE BAD NEWS.



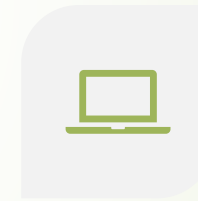
THE GOOD NEWS IS THAT THERE ARE A LOT OF OPTIONS OUT THERE TO HELP, AND THEY AREN'T VERY COMPLICATED AT ALL, ONCE YOU ARE A LITTLE FAMILIAR WITH THEM.



MAKING BACKUPS IS MUCH EASIER AND LESS EXPENSIVE THAN TRYING TO RECOVER FILES FROM A BROKEN HARD DRIVE.



NOT TO MENTION IF YOUR HARD DRIVE HAS BEEN LOST, DAMAGED, OR STOLEN, BACKUPS ARE THE ONLY WAY THAT YOU CAN RECOVER THE DATA THAT WAS ON THEM.



SO START BACKING UP YOUR COMPUTER TODAY AND SAVE YOURSELF A LOT OF HASSLE DOWN THE ROAD.



ALL HARD DRIVES WILL EVENTUALLY FAIL; IT'S JUST A QUESTION OF WHEN AND WHETHER OR NOT YOU'LL BE PREPARED.




Three Kinds of Backups

There are many ways to backup your files.



Even manual copies (like saving a copy to a USB drive) are a kind of backup, they just aren't a very good kind, because you have to do it manually, you have to do it repeatedly, and you have to manage things like deleting and renaming files.



A good backup system is as easy as possible (so you're more likely to use it) but the best backup systems automatically perform incremental backups so you don't need to think about it or remember to do anything about it once the system is set up.

A Bootable Backup or Clone (1 of 3)



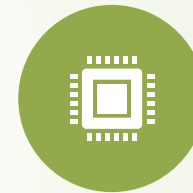
A "bootable backup" (sometimes called a "clone") is like a spare tire for your car.



If you get a flat tire, a spare will let you finish your trip or at least get you to the point where you can get more help.



A clone is a complete copy of your computer's primary hard drive (sometimes called a "boot drive").




If your computer's primary drive died tomorrow you could hook up the clone, reboot your computer from it, and have immediate access to not only all of your files but also all of the software you use, including all of the settings and configuration changes that you have made.



If you are in the middle of an important project or just don't have time to replace the boot drive immediately, a clone can really save the day.



A clone also has a copy of all your files as they were when the clone was last updated, which means that if you accidentally deleted a file, you can copy it back from the clone to your boot drive.



A Bootable Backup (or “Clone”) (2 of 3)

A spare tire isn't meant to be used for very long, and it usually isn't as good as the original.

The same is true of a clone backup drive.

With a car there are lots of other things that can go wrong besides the tire failing.

With a computer there are lots of other things that can go wrong besides the hard drive failing.

Your computer will run slower when booted from an external drive, and there may be some other shortfalls.

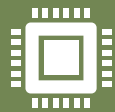
A Bootable Backup or Clone (3 of 3)



Still you'd definitely like to have a clone when your primary hard drive fails.



Of course your clone will only be useful if it has been updated recently, because otherwise it will be missing files.



However, because it has to examine every file on your computer, it can take awhile to create, and it is best not to use your computer while the clone is updating.



Due to all of those factors, a clone is usually updated once a day at most and more often only once a week.

External Backup Drive

1

You can also use an external hard drive to create an archive of your changed and deleted files.

2

An archive is different from a clone in a few ways:

- first, it isn't meant to be a bootable backup;
- second, it isn't limited to a "snapshot" of your entire drive at one point in time. Instead, it creates incremental backups, which keep up with you as you work.

External Drive Backup

- ▶ External drive backups are mainly intended to provide a backup of your personal files, especially irreplaceable things like pictures.
- ▶ Instead of looking at your entire hard drive, this type of backup only looks at certain folders, such as your home directory.
- ▶ The archive part of this type of backup means that if files are on your primary hard drive are changed (or even deleted) you can go back to undo the changes and even recover those deleted files.
- ▶ If your computer dies you can simply plug the external backup drive into a different computer and immediately have access to all of your files, as well as the history of changes and deleted files.



External Backup Drive



Most external drives for PC come with their own backup software.



If you use a Mac you can buy an external hard drive and use [Time Machine](#), which will run every hour and check for changes.



It will save hourly backups for the previous 24 hours, daily backups for the previous month, and weekly backups for previous months.



Time Machine is easy to use, both for backing up and restoring files, but it does have drawbacks.



Having to connect an external hard drive to your computer is inconvenient for laptop users who want to be able to move their computer around.



Apple also sells [Time Capsule](#) (a Wi-Fi router with a built-in hard drive), which can do Time Machine backups over Wi-Fi. However it is relatively expensive (currently US\$300 for 2 TB, or \$400 for 3 TB) compared to other backup solutions.



External Backup Drive

One advantage of a local archive is that there is no monthly or annual fee, and you have immediate access to all of your files in case your computer dies.

However, the amount of file history (that is: how far back you can go to get previous versions of files, and how many deleted files you can recover) is limited by the size of the external drive.

If you need to get a file back from yesterday or last week, you can probably do that.

If you need to get a file back from several weeks ago, you might be able to or you might not, depending on how much other data is being backed up.

Last but not least: an external backup drive is still a hard drive, subject to wear and tear, it will eventually need to be replaced, at which point you will either have to migrate your data to a new drive (if possible) or start from scratch.



Cloud Backup

1

Having a backup (or two) next to your computer is a good start, but it still puts your data at risk for theft, fire, or other disaster.

2

Your best protection against that type of loss is to keep another backup somewhere else.

3

While you could make a clone and bring it to a friend's house or your office, or even put it into a safe-deposit box, chances are that you would not remember to keep it updated because it would be inconvenient.

Cloud Backup



In fact, cloud backups are the easiest kind to create and maintain.



To get started you simply need to create an account, download software, run it once to enter your account information, and (optionally) set any preferences that you might want.



After the initial setup you don't need to do anything, the software will automatically keep your computer backed up any time it is turned on and connected to the Internet.

Cloud Backup

- ▶ Behind the scenes a lot is going on with your cloud backup.
- ▶ First your files are encrypted so no one else can read them.
- ▶ Then they are copied not just to one drive but to lots and lots of drives.
- ▶ One of the main benefits of cloud backup is that the "cloud" is made up of many distributed and redundant computers and drives, so the loss of any one will not cause you to lose any files.
- ▶ Once they are uploaded, you never have to worry about uploading them again unless they are changed.
- ▶ Even then, changes can be sent much faster because the software is smart enough to know what is different and only send the changed data.



Cloud Backup



The main downside people have with setting up an offsite backup is the initial upload, which can take a few weeks or even a month.



This depends on how much data you are trying to upload and the speed of your connection.



Most ISPs are more focused on download speeds than upload speeds.




If your current plan has slow uploads, you might be able to call them and temporarily upgrade to a plan with more "upload bandwidth" during your initial backup.



Another potential negative is if you lose your entire drive and need to get all of your files back.



In that case you would be limited by the speed at which you can download from your cloud backup provider.



Which Backup Option Should you choose?

Ideally, a 3-2-1 backup strategy is recommended, this means 3 copies of your data, 2 on-site but on different mediums, and 1 offsite.

A good way to start is by having the original copy of your data, along with an external hard drive or clone at home, and an off-site solution like an online backup provider.

If you can only have one solution to start, online backup is recommended, for three reasons:

- A bootable backup can really save the day, but if your computer dies because of something other than the hard drive, a bootable backup won't help. Also, you have to remember to update it.



If you use a desktop computer a local external drive backup like Time Machine is great, assuming you can keep the drive connected and running all of the time.



However, fewer and fewer people are using desktop computers today, and if you use a laptop you either have to remember to plug in the backup drive or get a wireless backup system like Time Capsule, which can be expensive.



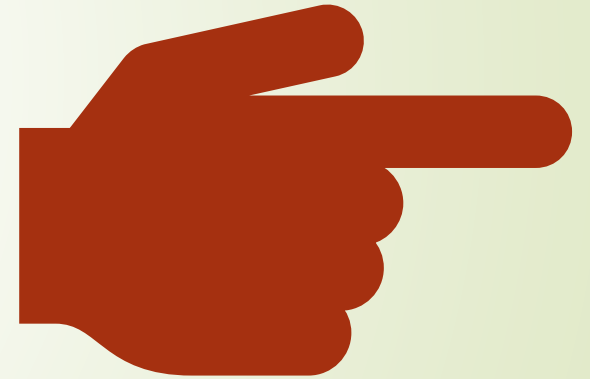
(For example: a \$300 Time Capsule will only backup 2 TB)



*Mankato Computer Repair Acronis Backup Pricing option

3

- ▶ "Set it and forget it."
- ▶ Once you set it up all you have to do is leave your computer running until the initial upload is done, and after that it will update as needed during the normal use of your computer. You don't have to buy any hardware or figure out where to set it up or even configure it.
- ▶ There are settings you can customize if you want, or if you're one of those people who likes to peek under the hood. For most people the default unlimited backup is perfect and after you download and setup your account you can just sit back and relax.





Ensuring Data Security

- **Encryption:** Encrypt backup data for enhanced security.
- **Password Protection:** Secure your backup with a strong password.
- **Two-Factor Authentication (2FA):** For cloud-based backups, if available.
- **Regular Checks:** Verify backup integrity and accessibility.



Testing the Backup



Regular Restoration: Practice restoring files from your backups.



Mock Recovery: Simulate a complete system recovery to ensure readiness.



Backup Drills: Schedule periodic backup tests to identify and address issues.



Additional Tips

- **Offsite Backup:** Protect against physical disasters by storing backups offsite.
- **Redundancy:** Maintain multiple backup copies on different media.
- **Critical Data Focus:** Prioritize backup for important files and folders.
- **Documentation:** Keep a record of your backup procedures and configurations.

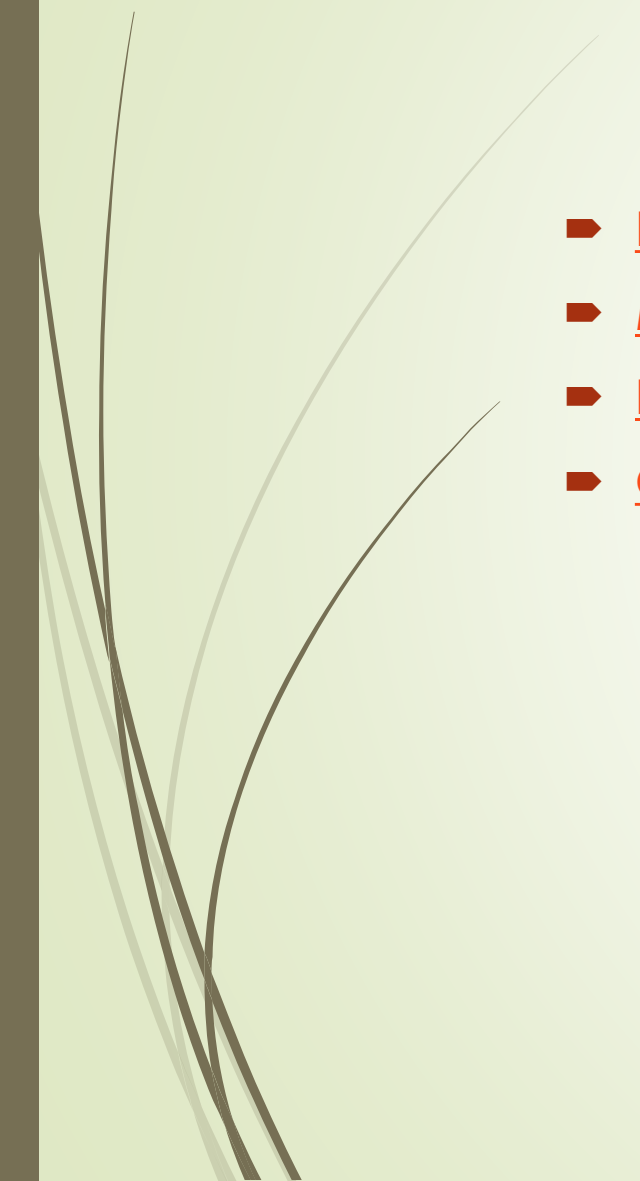


Conclusion

- Recap the importance of regular backups.
- Emphasize the diversity of backup options available.
- Encourage immediate action: Start backing up your computer today!



Pros/Cons and Step by Step

- [Backup Options Guide](#)
 - [Mac Backup Guide](#)
 - [PC Backup Guide](#)
 - [Online Storage/Online Backup](#)
- 



Final Thoughts

- Whatever you do, do something. Even an outdated clone of your computer is better than no backup at all.
- Remember: All hard drives will eventually fail - it's just a question of when and whether or not you'll be prepared.



Q&A Session/Thanks

- Prioritize computer backups for their data's safety.
- 