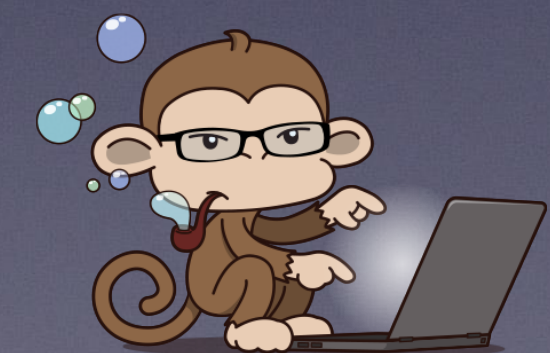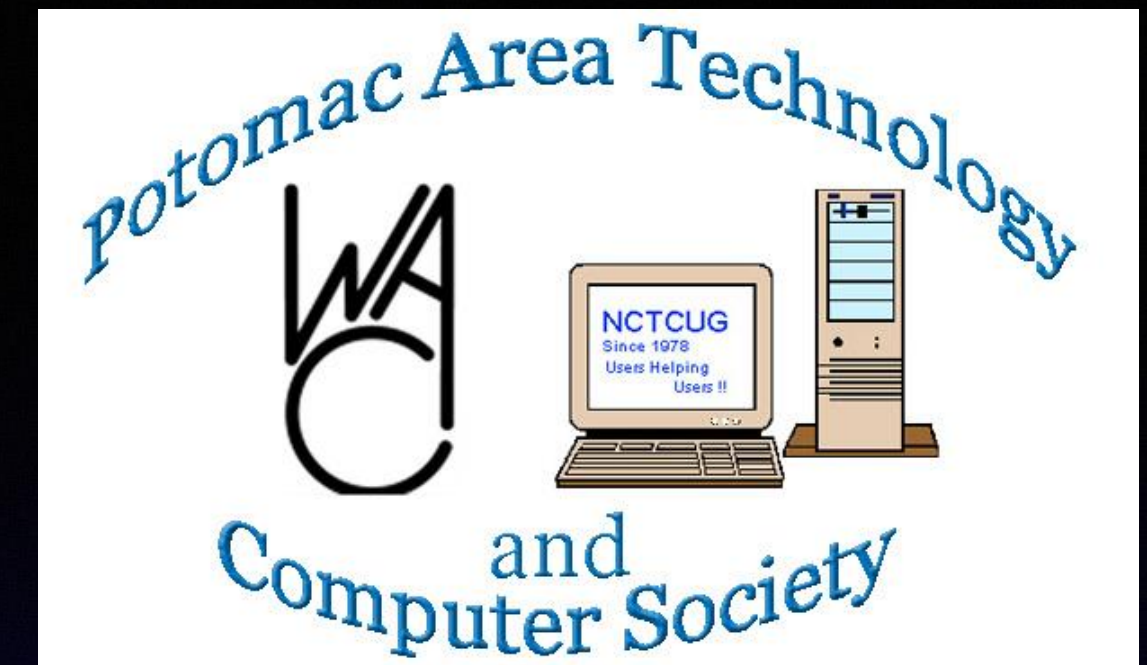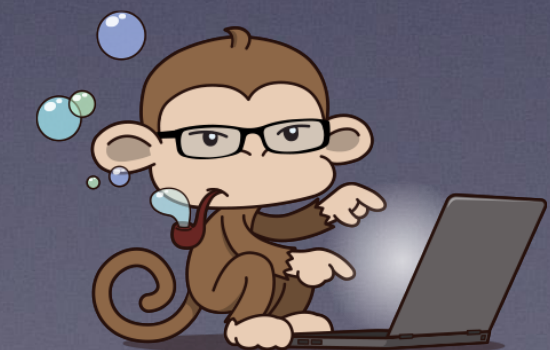Computer Backup
A " Lifeline "
in case of a digital emergency !
presented by Uwe Dotzauer
for the
OPCUG and PATACS joint meeting
November 18th 2022

# Today's Agenda

- Why do I need to backup my device ?
- Evolution of the Technology
- What should I backup ?
- Clone vs Backup
- Online vs Local
- Which Software should I use ?
- What Hardware ?
- Online backup provider
- iCloud, Drobox, Google Drive etc…
- Is TimeMachine enough ?
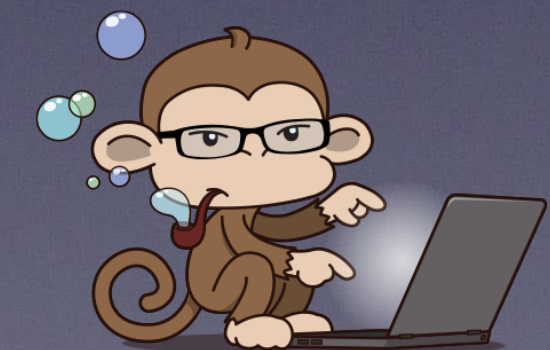- Backup for iPhone/iPad (update)

# Why do I need to backup my device?

- 113 phones are lost/stolen per minute

- Every 14 sec ransomeware attack

- 1 in 10 Computers infected with virus/month

- Every 53 sec a laptop is stolen

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Uwe Dotzauer

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# What should I backup ?

## Anything you can not afford to loose forever !
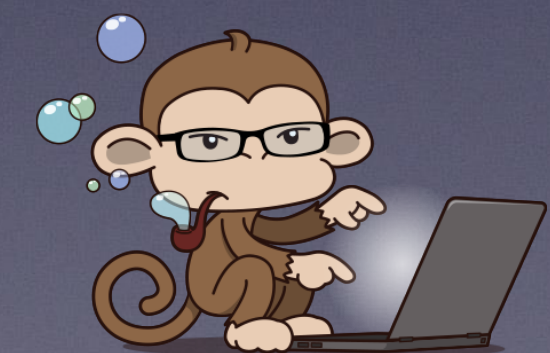
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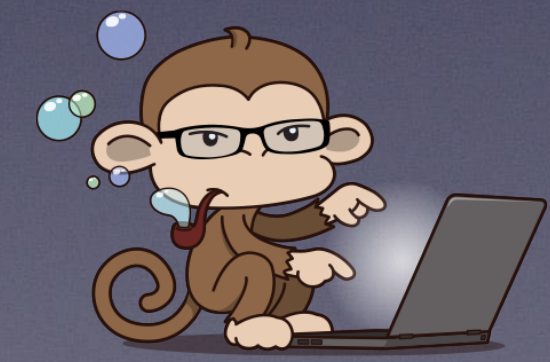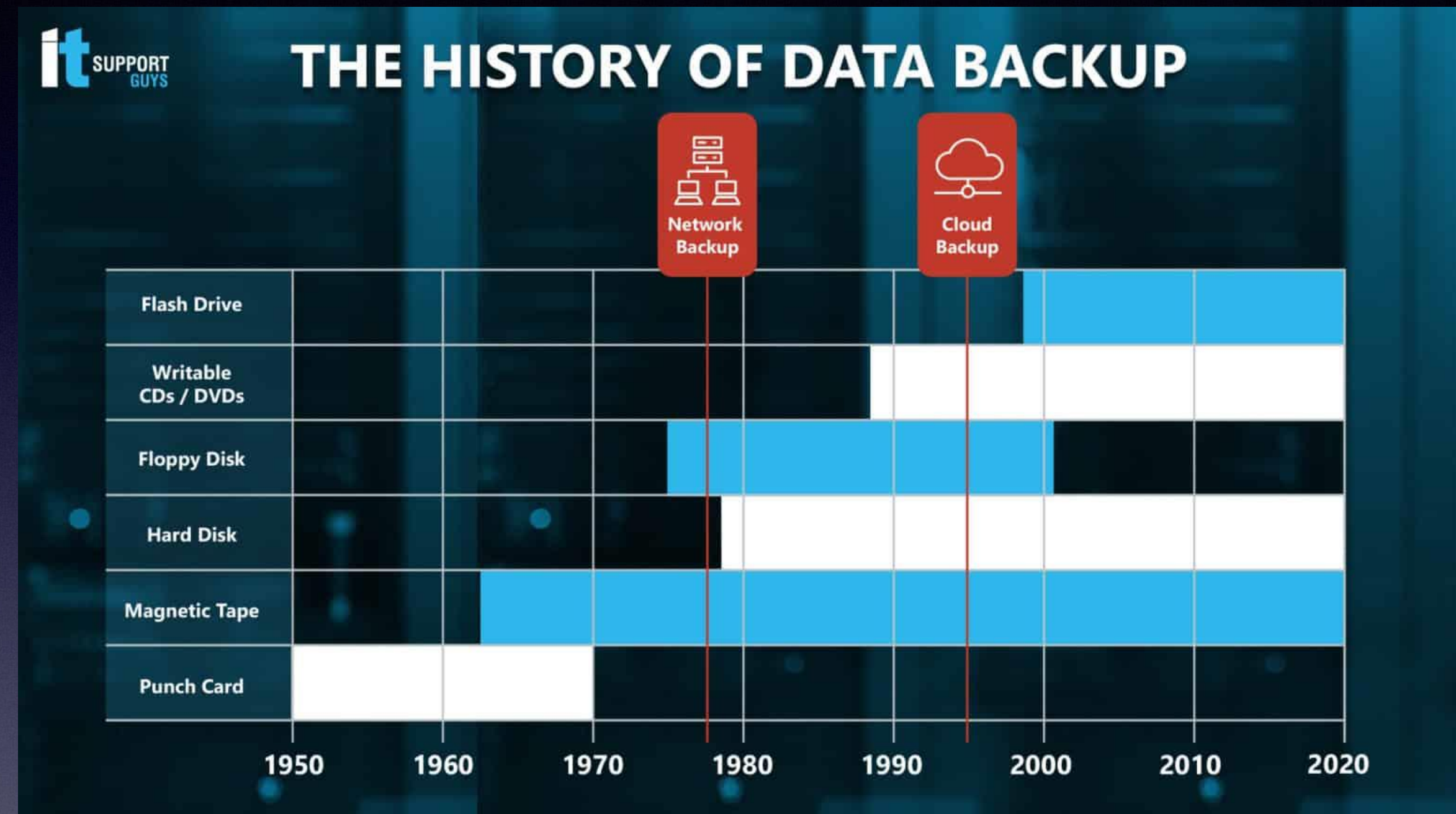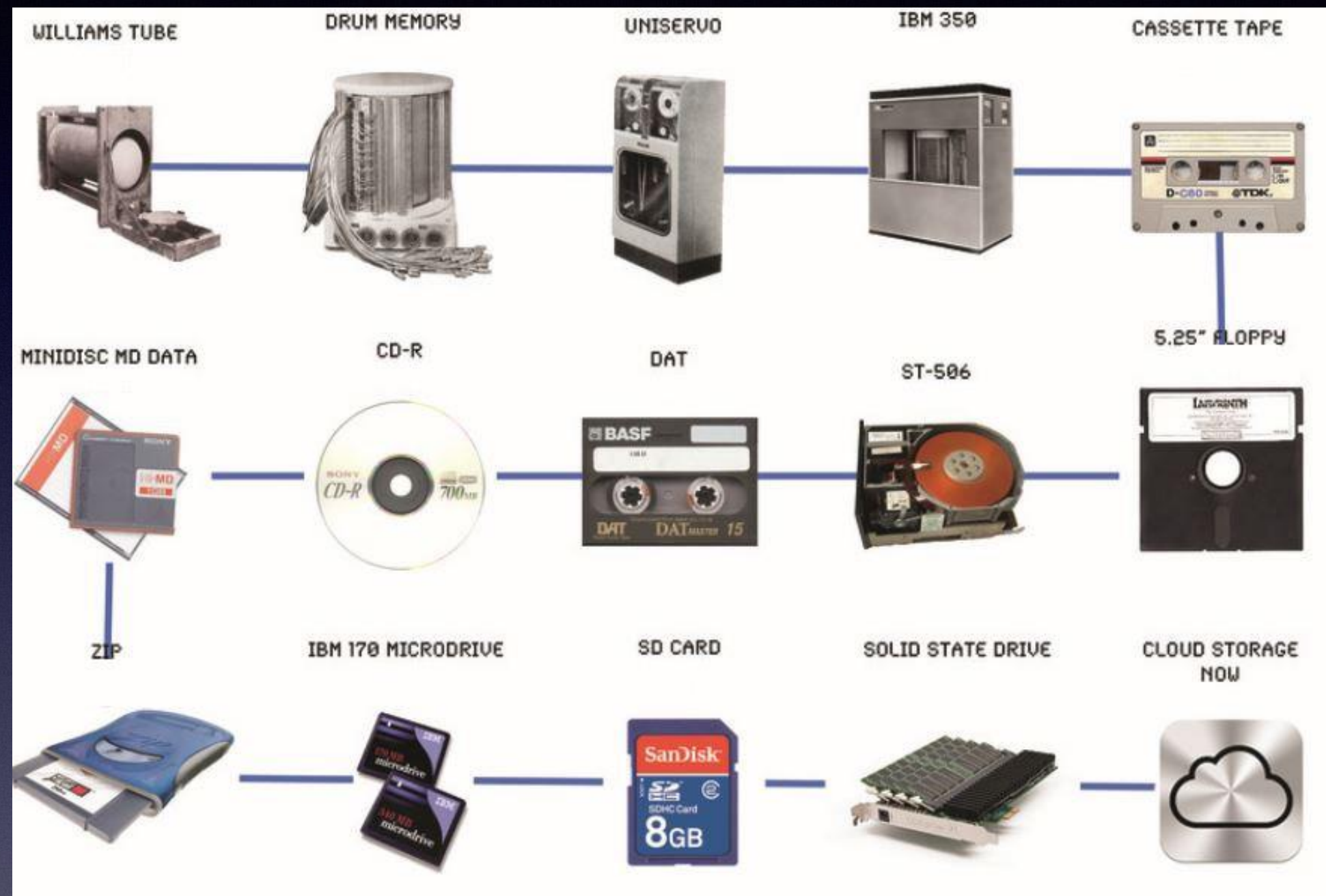703-340-6230

# (Un)Real Life examples

Toy Story 2
City of Baltimore
Richard Branson CEO Virgin Records

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703-340-6230
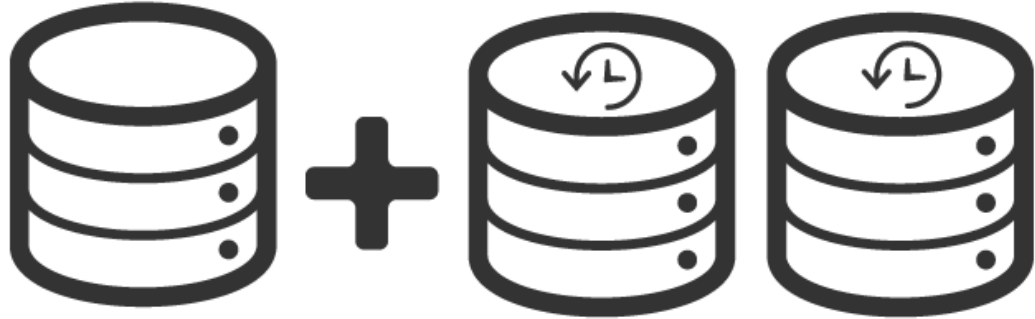
# The evolution of the Backup





THE HISTORY OF DATA BACKUP

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# The 3-2-1 Rule

# Offsite ?

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# Get a Safe ?

[Water and Fire proof](#)

# What Backup Strategy should I do ?

- How long can I be without my data?
- How fast do I want to restore my data?
- How much do I want to spend on services and equipment?





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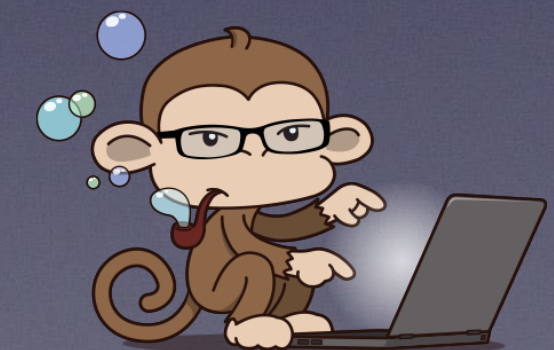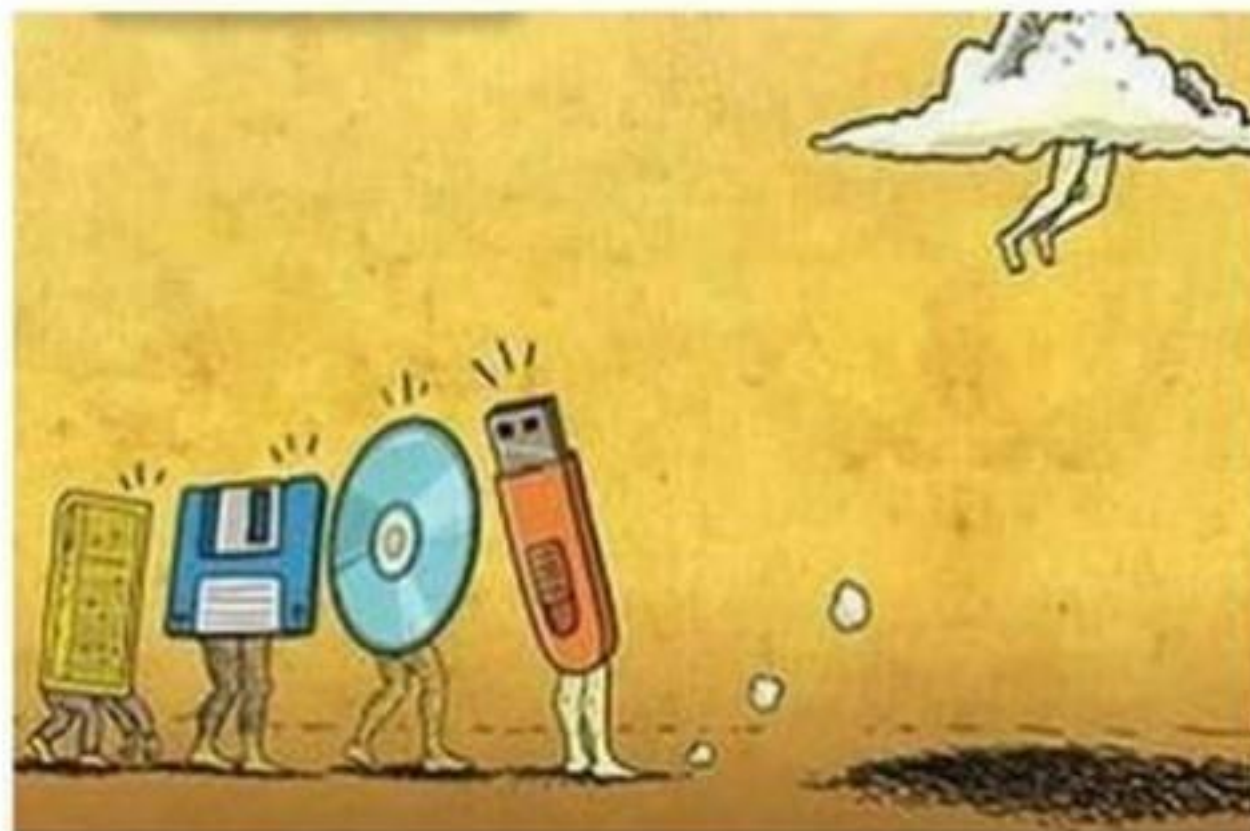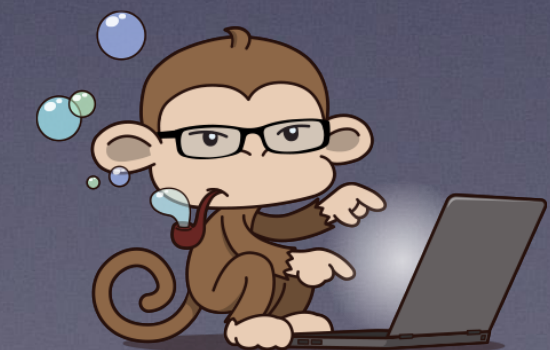703-340-6230

# Hardware and Software



The evolution of storage

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# HW Storage

# Mechanical SATA vs SSD
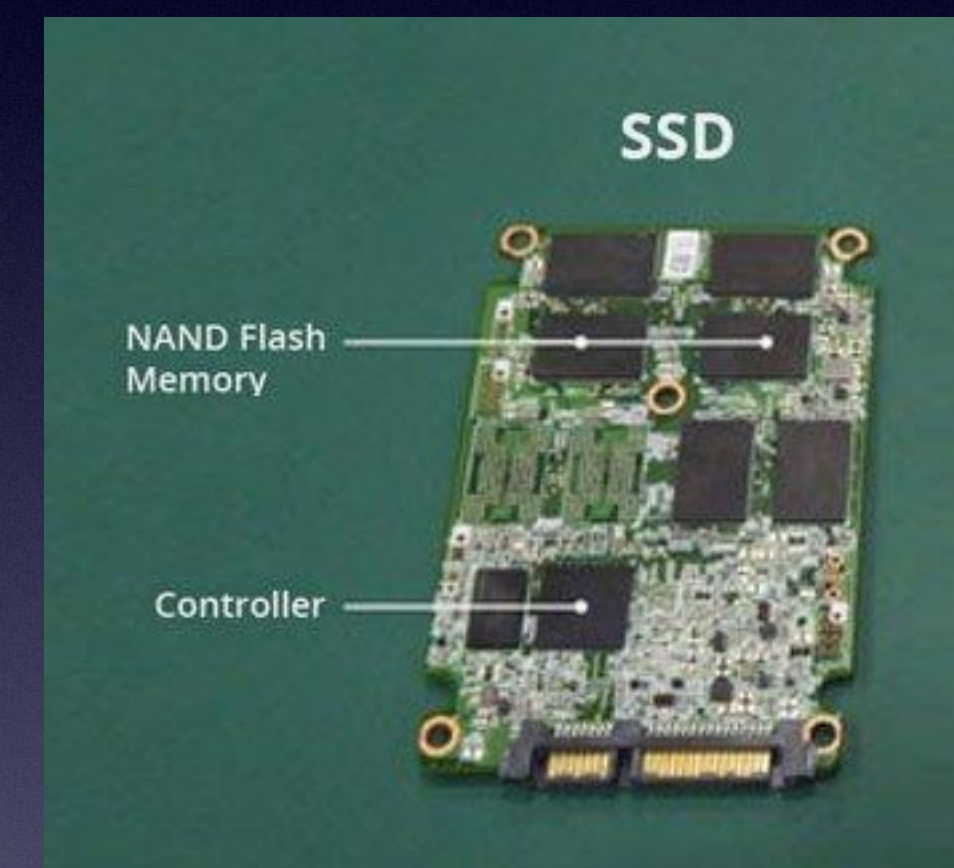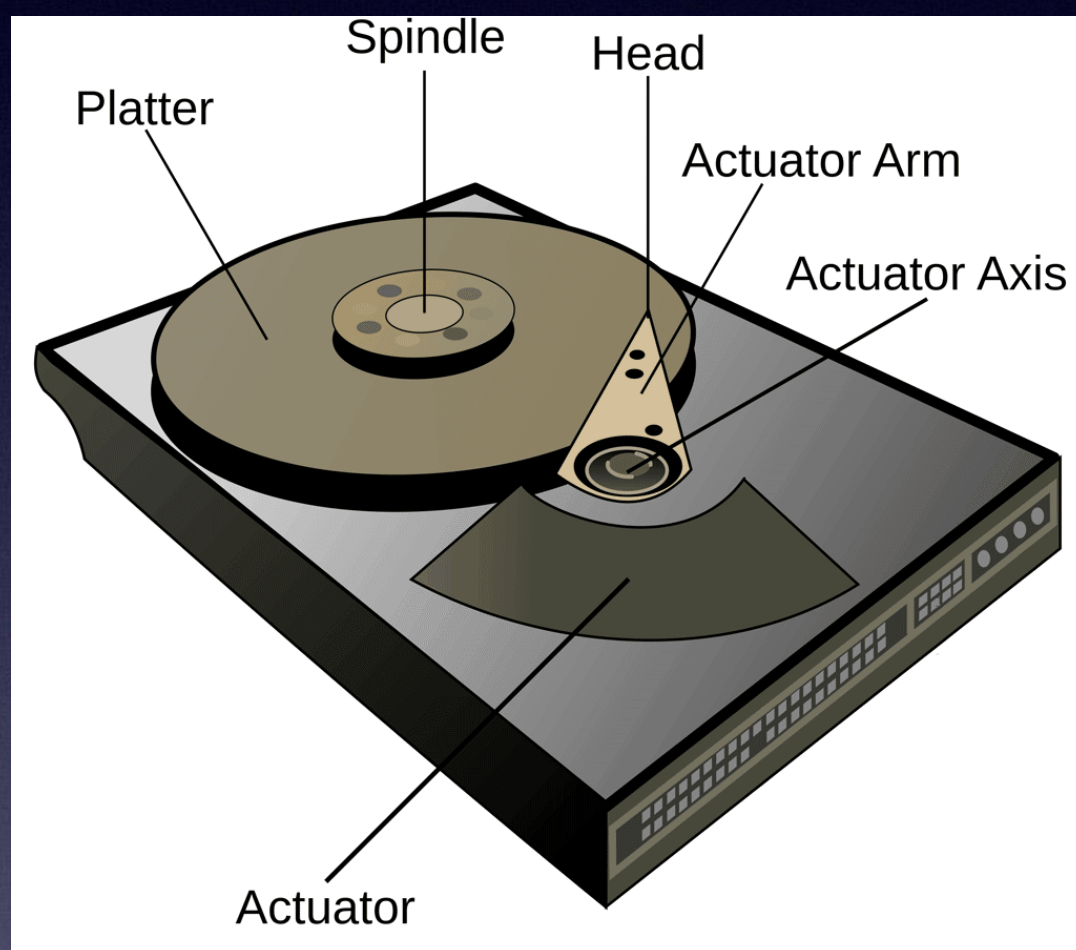
# Specifications

| Key Parameters | HDD | SSD |
| --- | --- | --- |
| Access Time | 5.5~8.0 ms | 0.1 ms |
| Random I/O Performance | Up to 400 io/s | 6000 io/s |
| Reliability | Failure Rate 2~5 % | Failure Rate 0.5% |
| Energy Savings | Consumes between 6 & 15 watts | Consumes between 2 & 5 Watts |
| CPU Power | Average I/O wait is 7% | Average wait time is 1% |
| Input/Output Request Time | Average time is 400~500 ms | Average Service time 20 ms |
| Backup Rates | 20~24 hours | 6 hours |

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# SSD's still expensive

SSD

VS

**G-DRIVE™ PRO STUDIO SSD**

from SanDisk Professional

★★★★★ 5.0 (1)  Write a review

Capacity

**7.68 TB**

~~$1,749.99~~ **$1,599.99**

Starting at $100/mo with affirm. Learn more

**G-DRIVE ArmorLock SSD**

from SanDisk Professional

★★★☆☆ 3.3 (4)  Write a review

Capacity

| 1 TB | 2 TB | **4 TB** |

~~$699.99~~ **$599.99**

Starting at $55/mo with affirm. Learn more

Part#: SDPH51J-006T-NBAAD
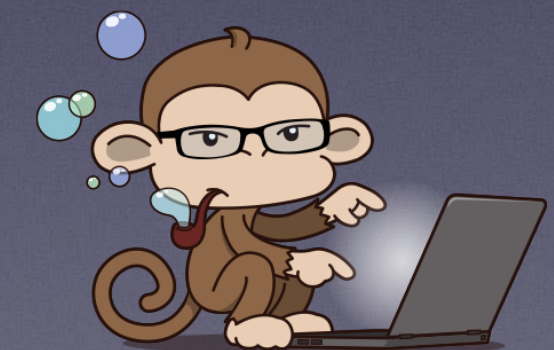
**G-DRIVE™ PRO Desktop Drive**

from SanDisk Professional

★★★☆☆ 3.6 (19)  Write a review
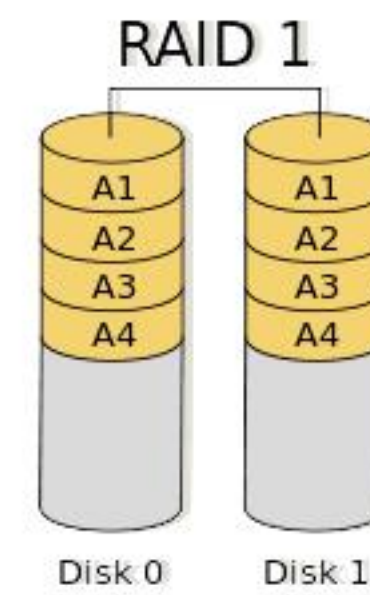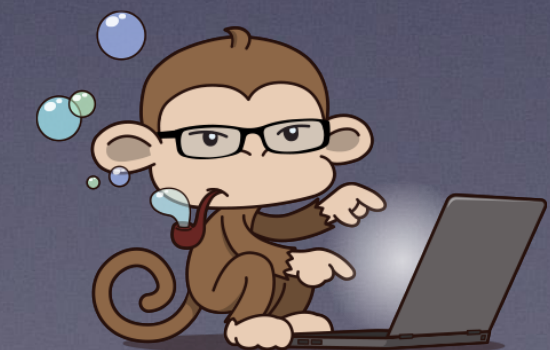
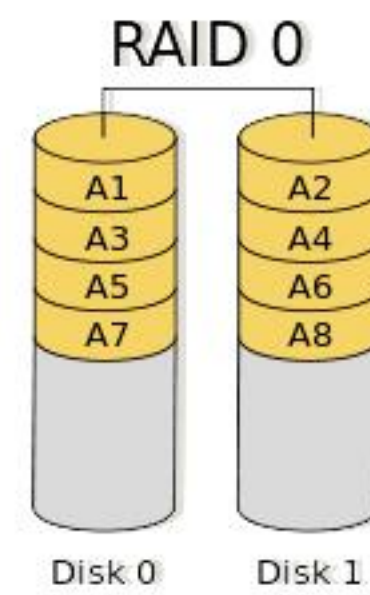Capacity

| 4 TB | **6 TB** | 12 TB | 18 TB |

| **20 TB** |

**$349.99**

# RAID

# RAID 10

Combines speed from R0 with high reliability
2 out of 4 disk can fail, still have all your data
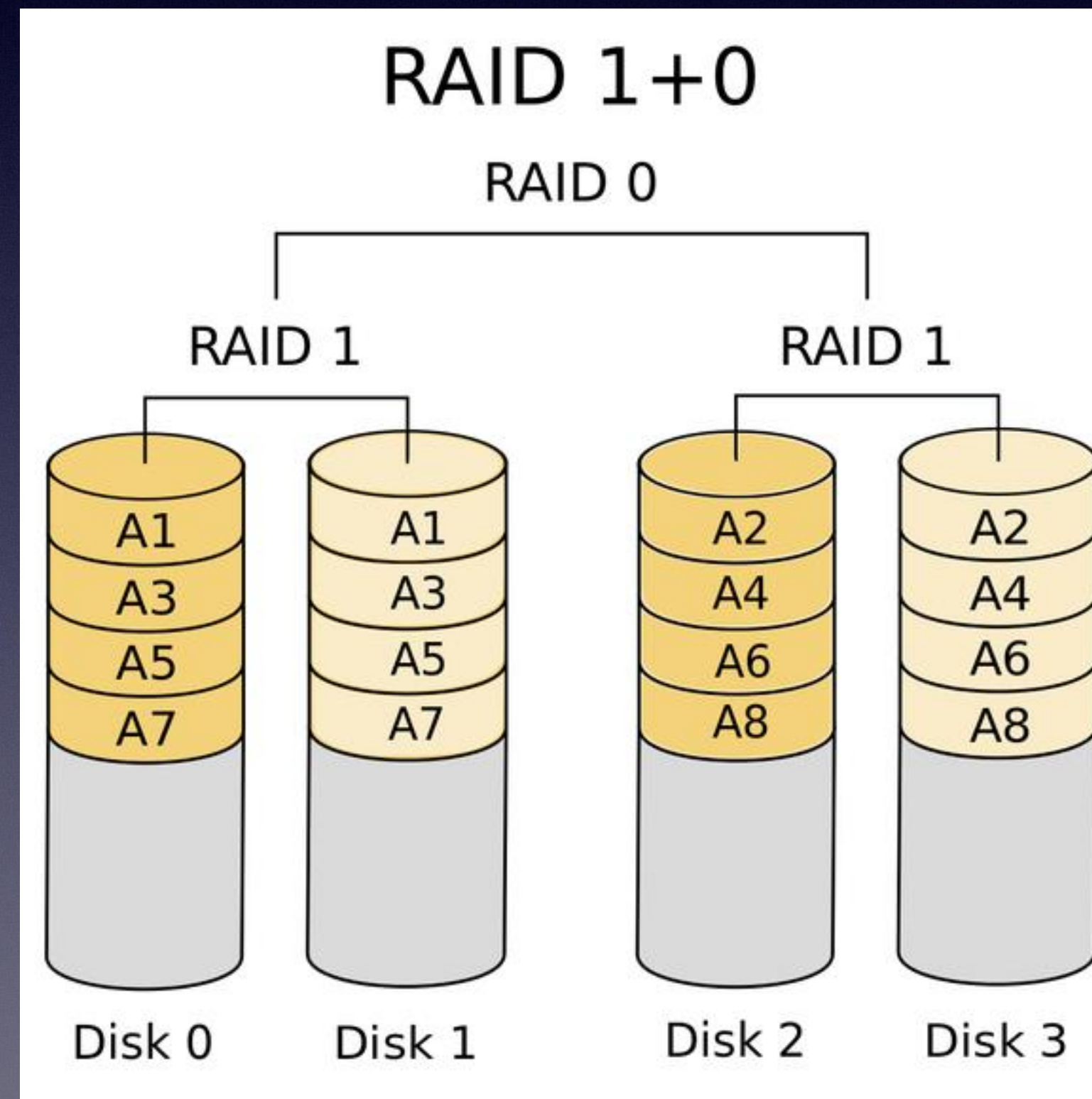
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# PRO vs CON

You need double the storage of your original disk
Fast
Inexpensive
Need at least 4 drives
If 2 drives of the same array fail, the data is gone.
Still need another backup software to provide full data recovery

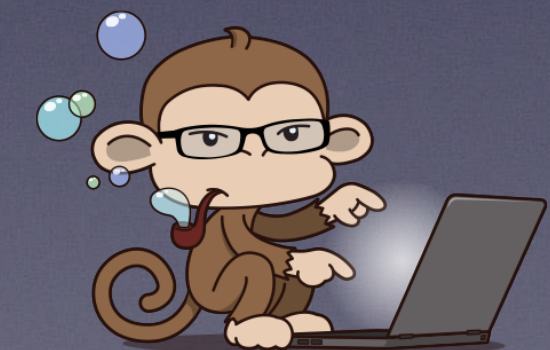**PROMISE Pegasus32
R4 16TB RAID System**

$1,499.00

Order today. Delivers to 22301[††]
Sep 21 - Oct 5 — $8.00
Sep 22 - Oct 6 — Free

Order now. Pick up, in store:
**Thu, Oct 6** at Apple Pentagon City

Add to Bag

**Still deciding?**
Add this item to a list and easily come
back to it later.

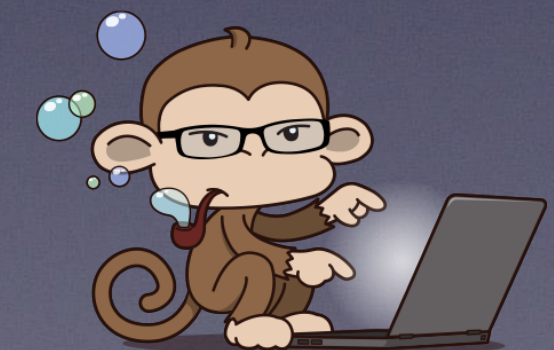**Need some help?** Contact us.

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# Network ( Home ) Storage





- •Small Office / Family
- •WiFi / no cables
- •Central Storage
- •Remote access
- •Inexpensive

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Don't rely only on flash drives for your entire backup !!

# Hollywood History

In 1995 9GB HDD was $2350

Fax charges, Suite 2571,
15 January, 2021,
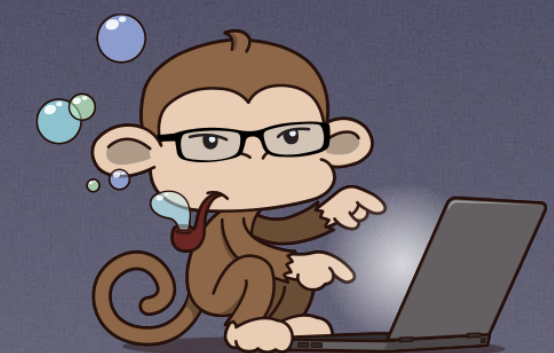
The term " iPhone " was first introduced in this movie !
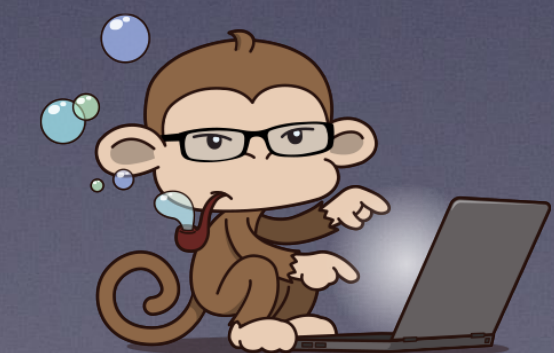
FIRST 80GB
FREE OF CHARGE

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# Software Solution Services
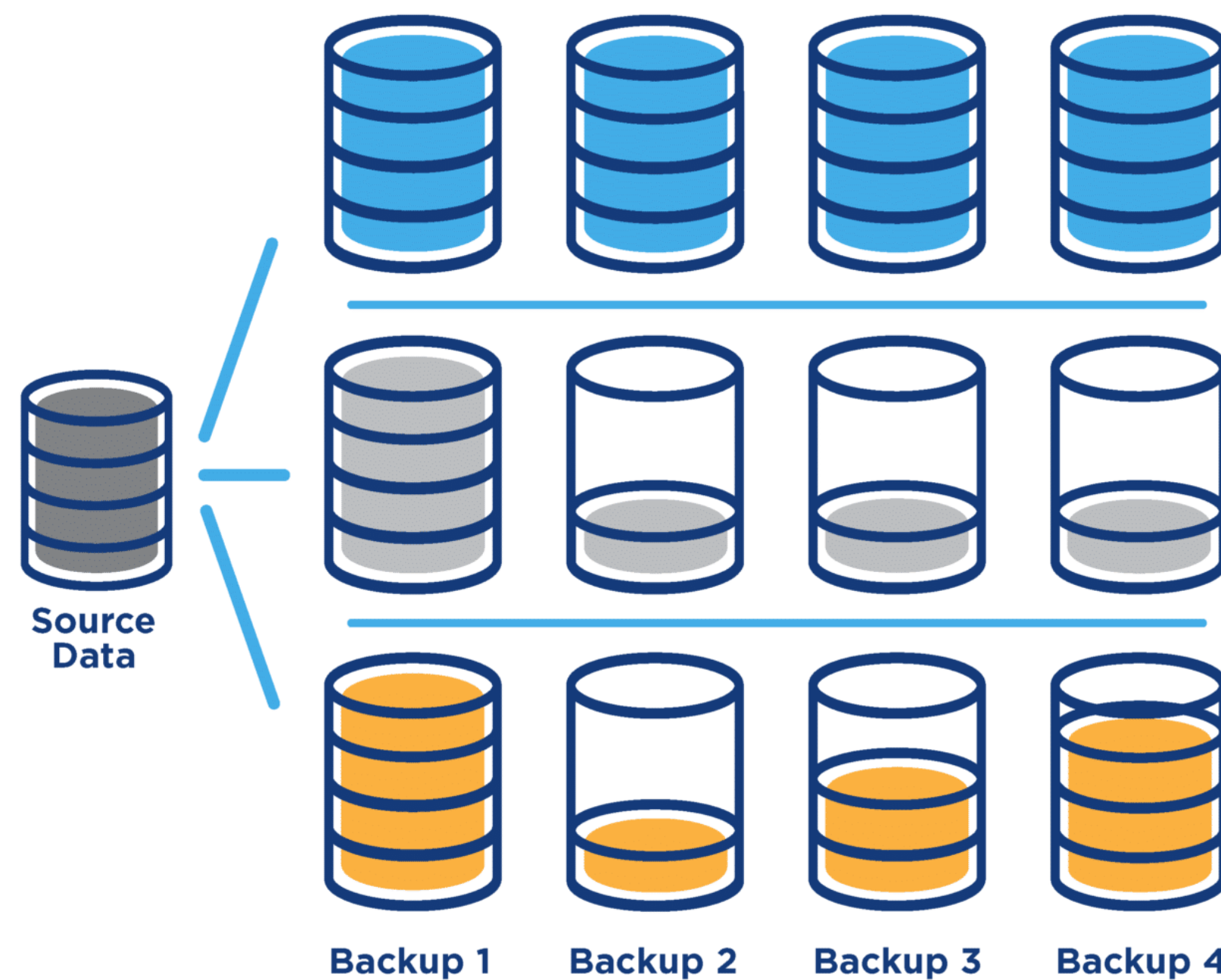
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# Backup Scheme

# Clone the System

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# Pro & Con

- Faster recovery
- Good when upgrading to a bigger drive
- Moving to a new Computer
- No compression used
- Needs more space on drive

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# Backup….
# There is an app for that !



ONE MORE SOFTWARE APPLICATION
TO SIGN UP FOR...

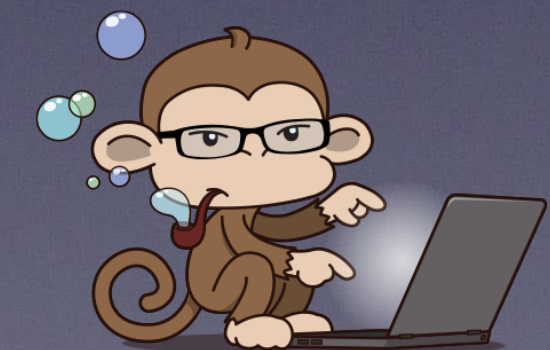makeameme.org
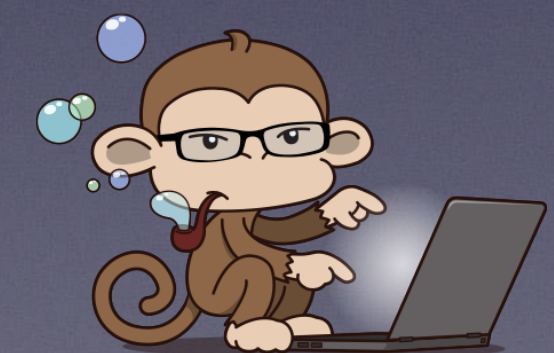
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# Carbon Copy Cloner

•Since 2002
•Bootable B/UP
•Differential, Incremental,Full
•Schedule
•Cloud friendly

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# Time Machine

- Encryption
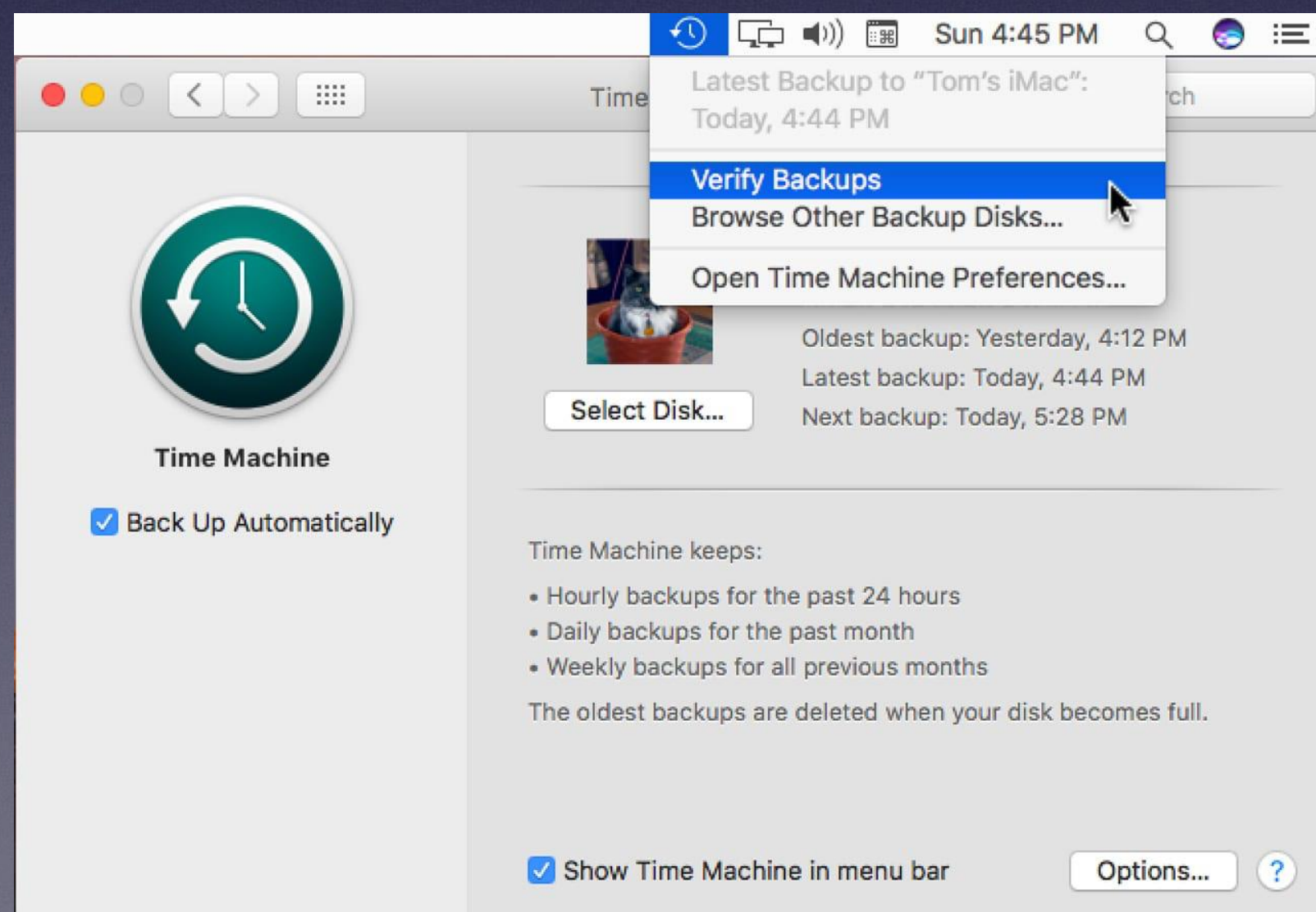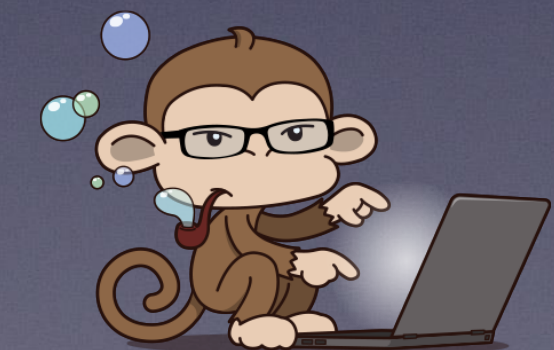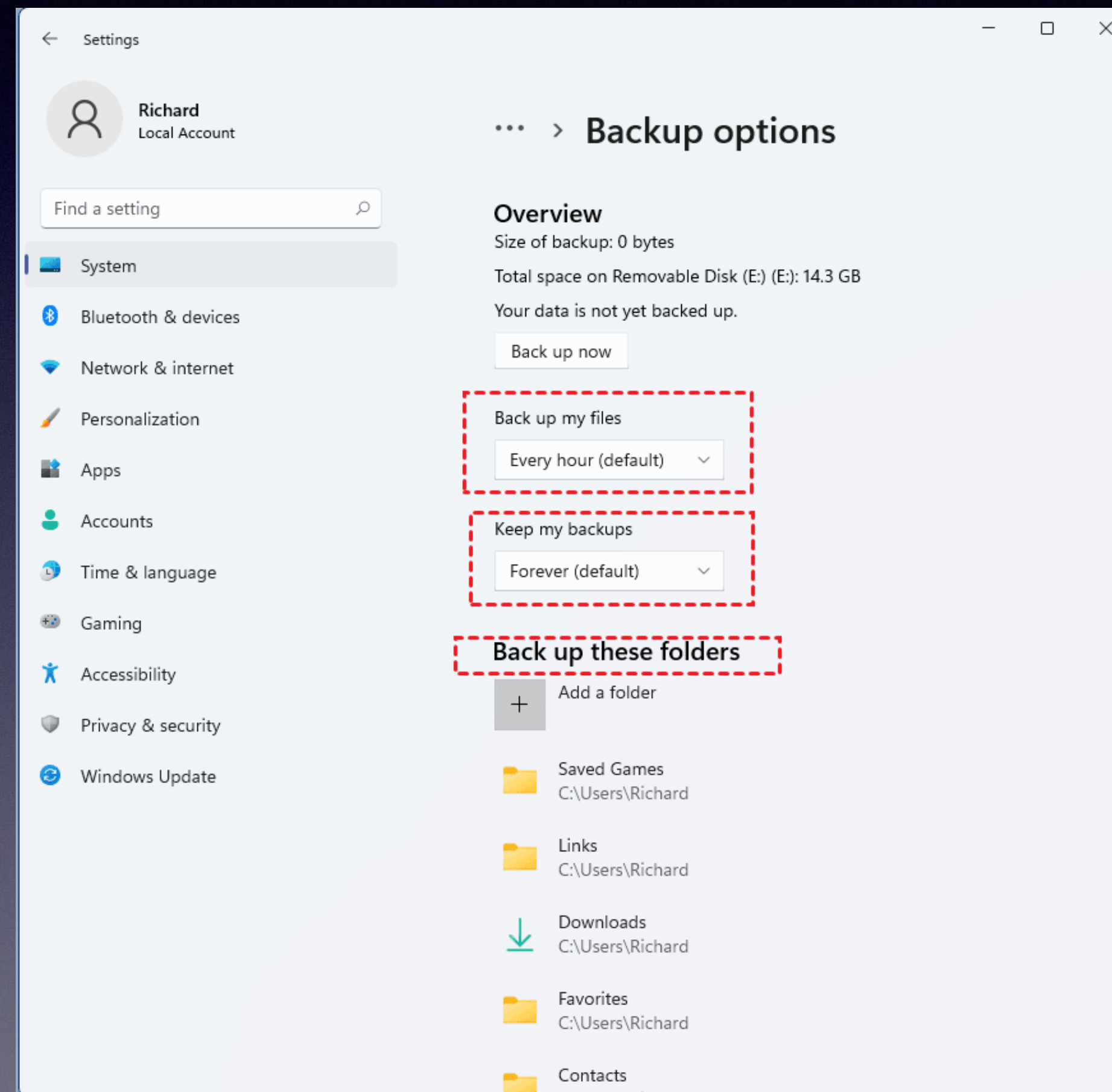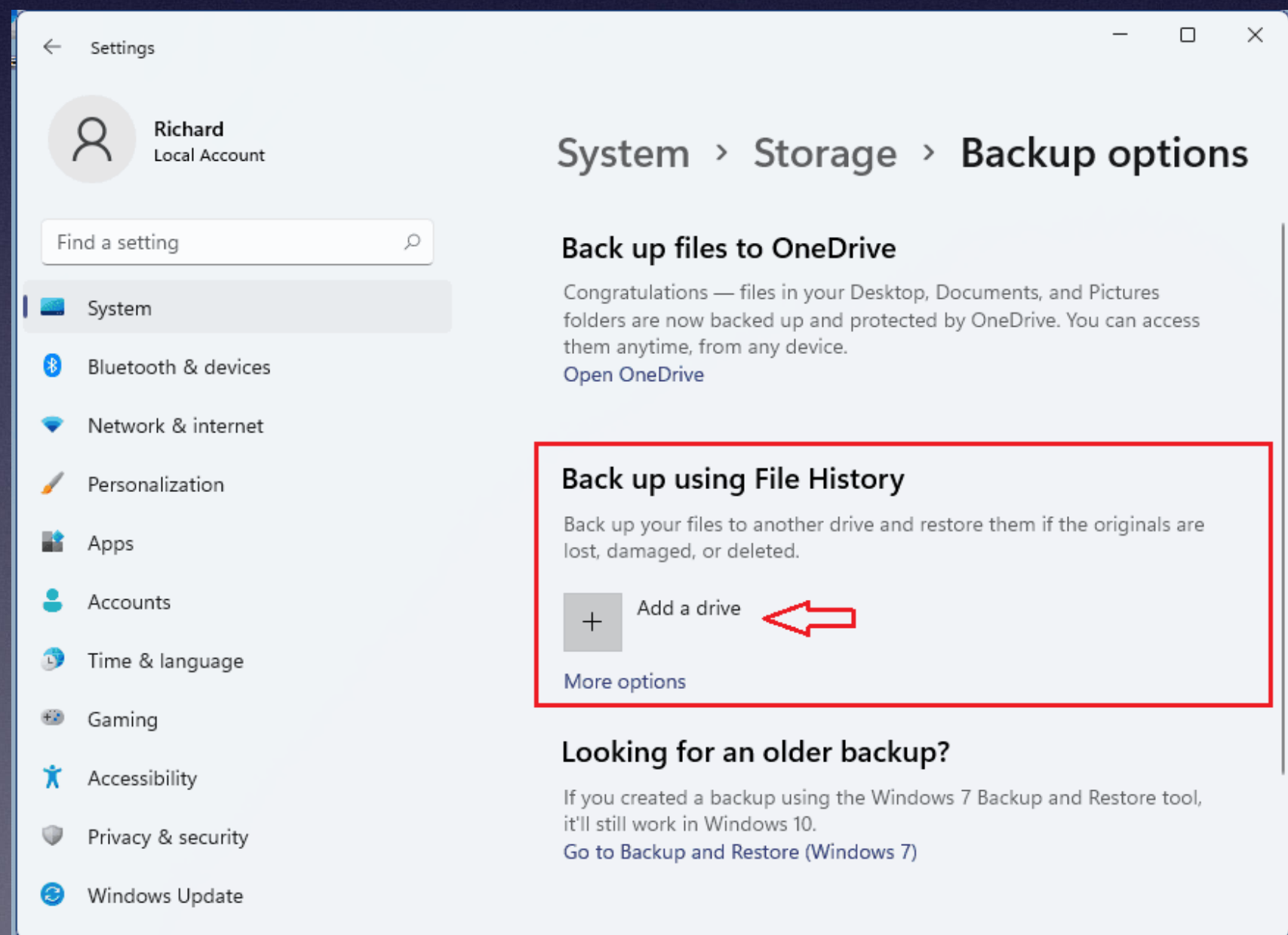- Verify Backups ( OPT+CLICK only NAS )
- As bigger the external drive, as more file versions
- Every hour
- Incremental
- Exclude items
- Multiple drives

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# Windows 11 Backup

# Know the Lingo

True online Cloud Backup vs Cloud Storage
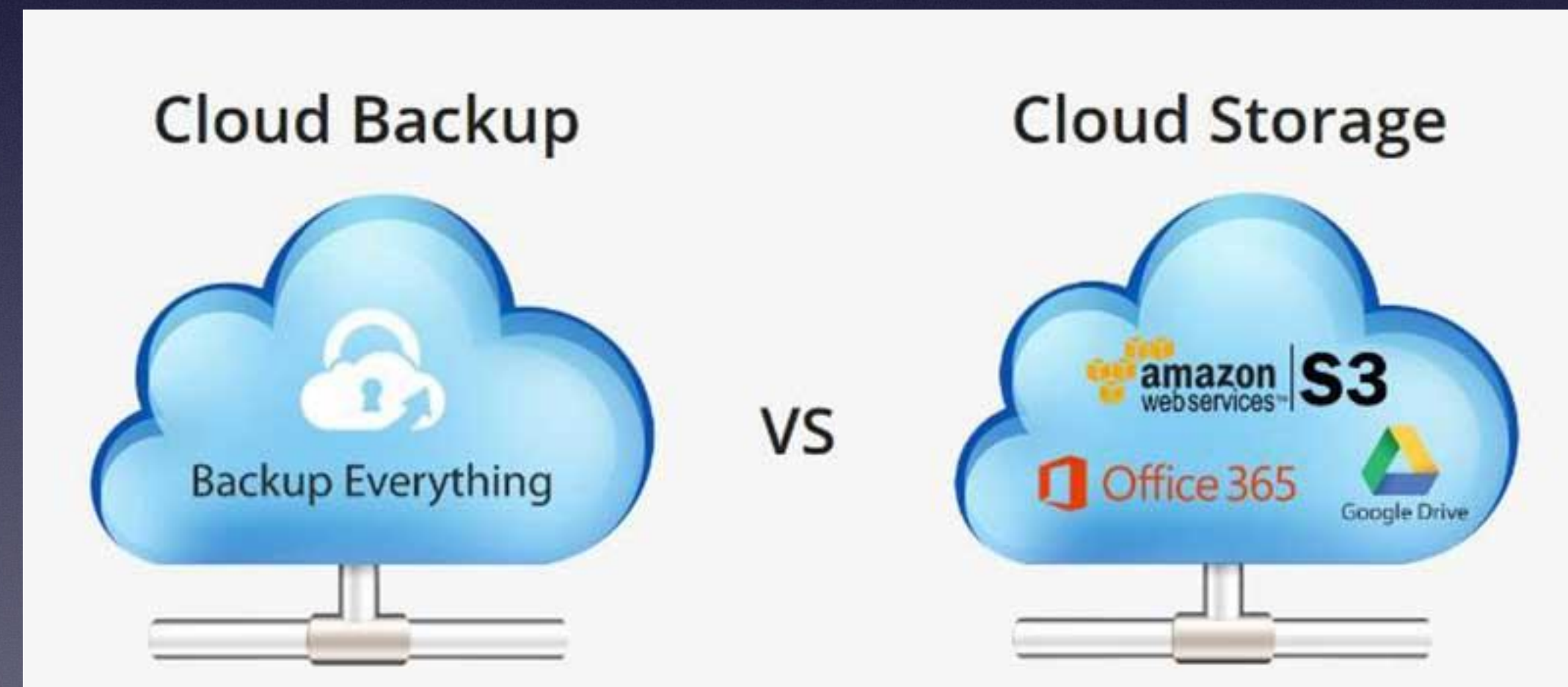
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# Cloud Storage



•Sync / storage of files and data in a specific location !

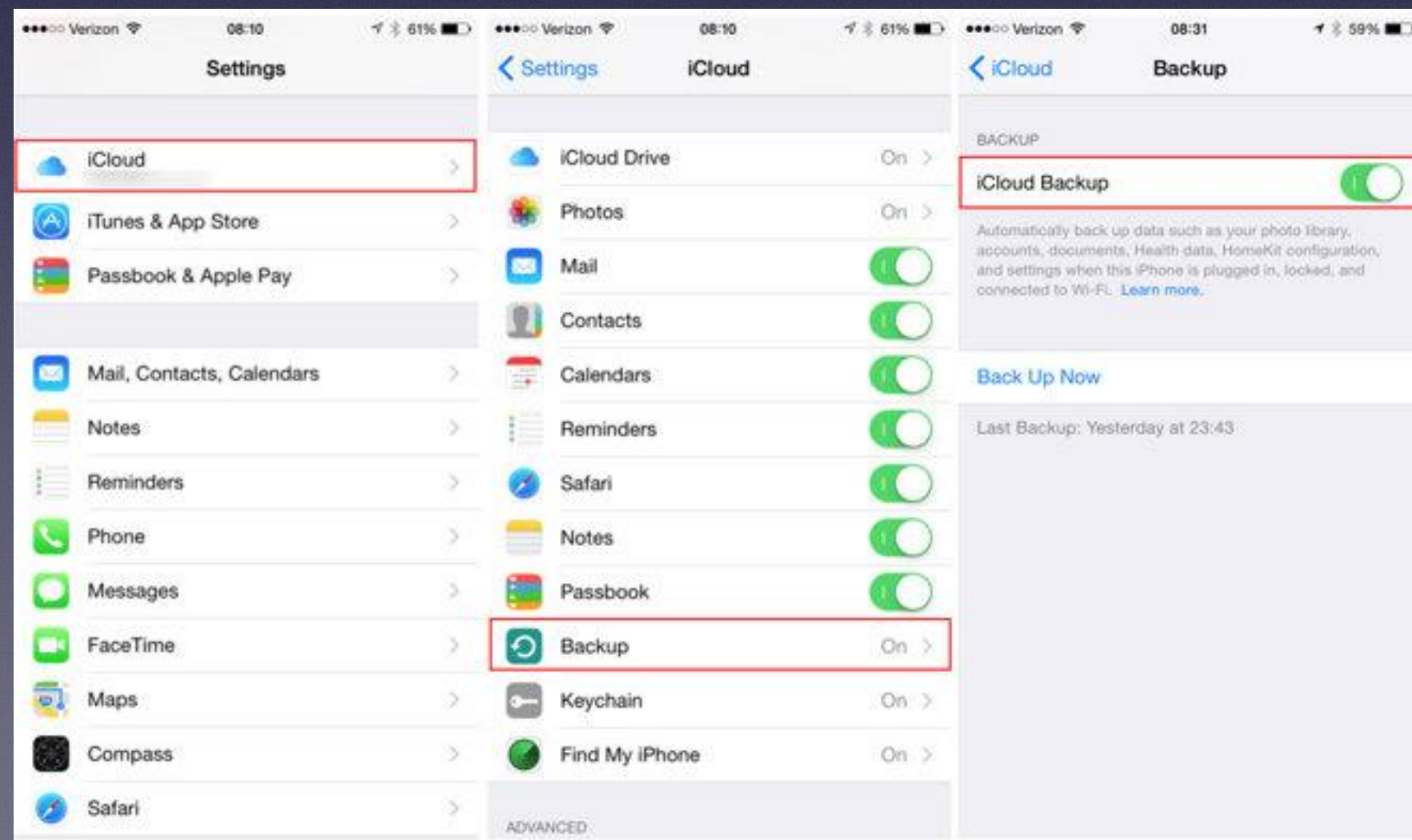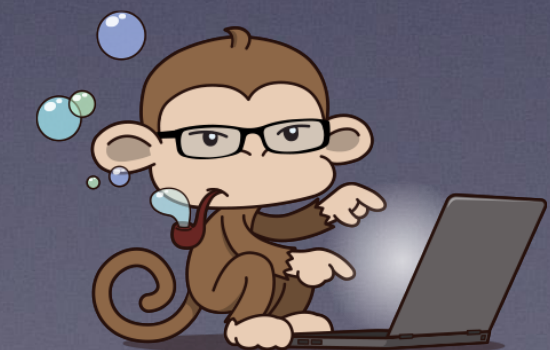•Content has to be in a spot, otherwise not included in the preservation !

•Delete one file is gone on all devices

•No version history







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# iCloud for iPhone/iPad Backup

This is **only** for mobile devices (Apple )
It does do a full backup !



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# Online Backup Services

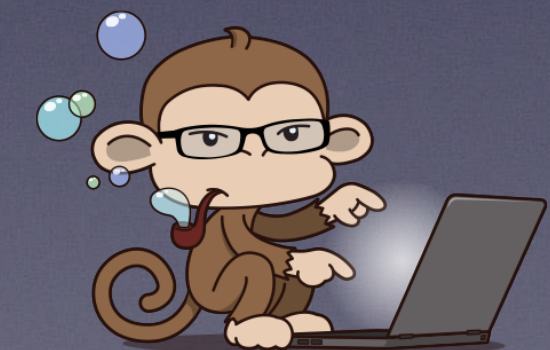## The entire system is being backed up !

**Backblaze**

- Unlimited storage
- Two factor authentication
- Fast upload speed

**CRASHPLAN**

- Unlimited storage
- Fast incremental storage
- Ransomware safe

**Acronis** Cyber Protect Home Office

- Lots of tools
- Full disk image
- Ransomware safe

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# Archive, the other kind of Backup!



One does not simply joke about archiving



ARCHIVING
You're Doing It Wrong

- Only if you don't need data for a long time
- audit, IRS, Legal
- Make sure you can access them in the future ( CD-ROM , Old Tech )

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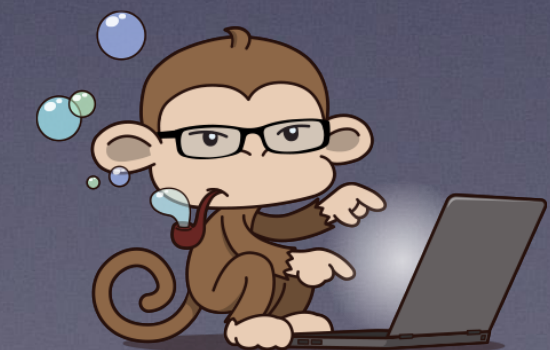703-340-6230

# Little Prevention Action

•Use a keyboard cover
•Use a surgenprotector UPS
•"Find my Mac"
•Set up FileVault (maybe)
•Get AppleCare+ ( accidental damage )

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# The Take aways

- Have a " Plan B "
- Know what is important to you
- Backup frequently
- Apply 3-2-1 Rule
- Check your backups regularly
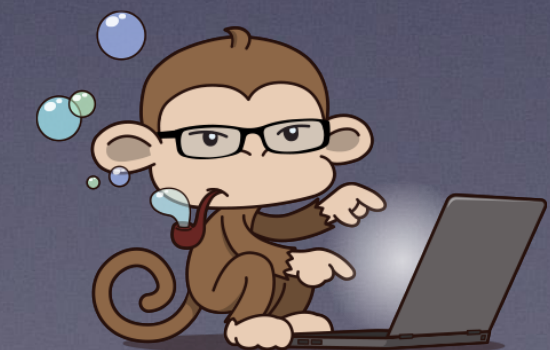- Prep for the worse case scenario

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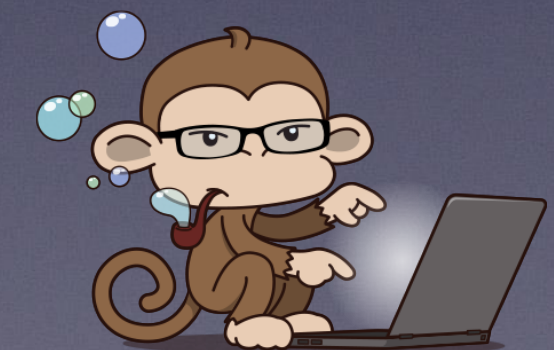703-340-6230

# For Hire



I have a particular set of skills

Desktop Support, Data Backup, Disaster REcovery and IT support

imgflip.com

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# There is one more thing…

# Questions ?

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