



Are Your Photos Safe?

Paul Streit

About Me

- 10+ years Product Management experience in retail external disk drives and backup software

Quantum™

Maxtor®

SEAGATE



What I'll Cover

- Why Backup?
- Backup Planning
- Storage Options
- Backup Software

Why do you need backup?

- Disk drives do fail !



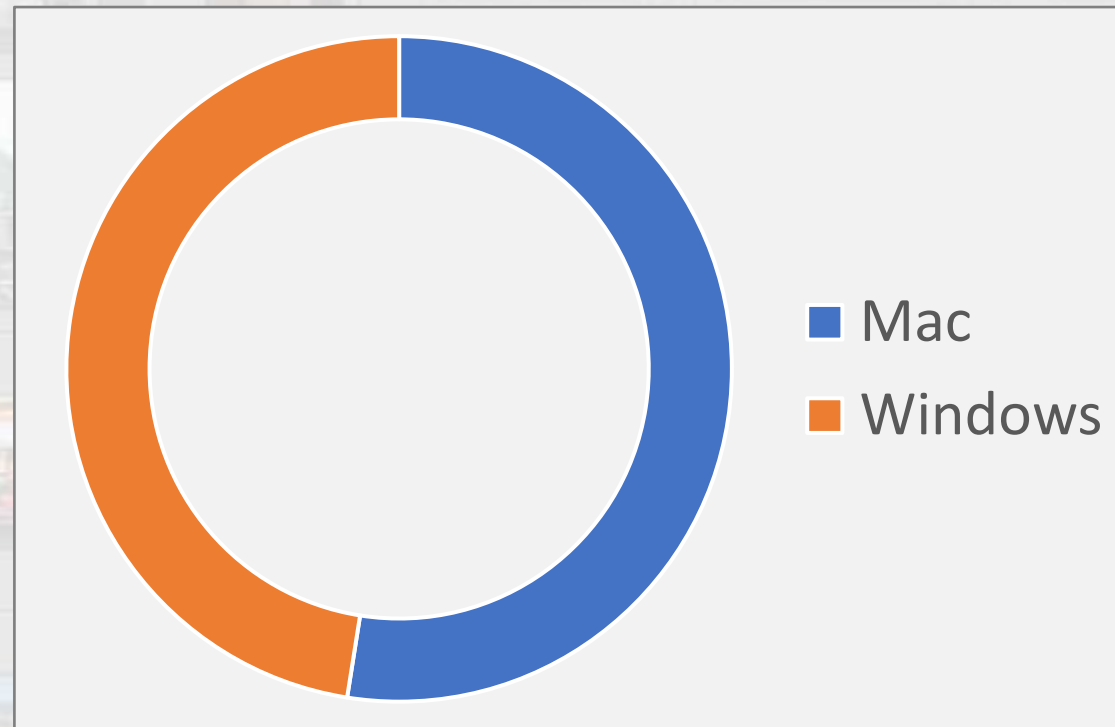
Why do you need backup?

- And there's ... system failures, ransomware, viruses, accidents, theft, fire, ...



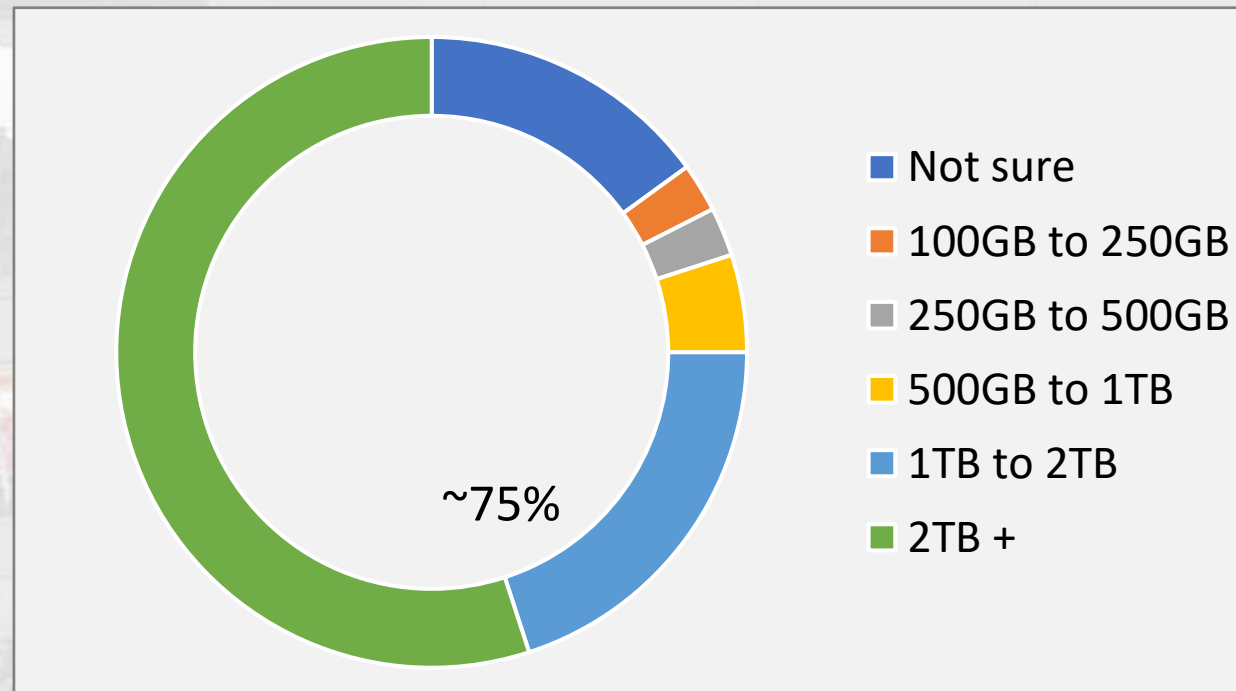
Summary of Club Members

- Almost even: Mac and PC



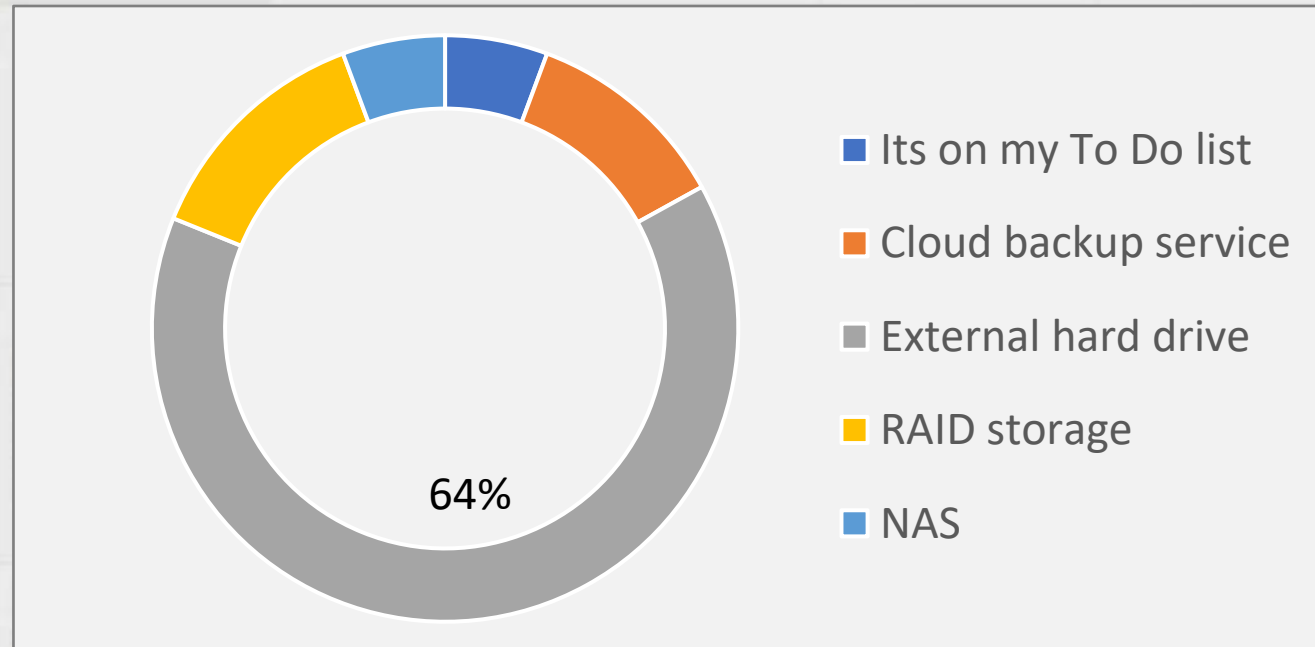
Summary of Club Members

- 75% have > 1TB of files



Summary of Club Members

- ~95% club is backing up!



3-2-1 Backup Planning (best practices)

3 Copies



2 Media Types



1 Off-site copy



“OK” Backup Planning

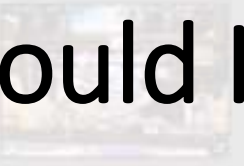
1 Copy



IS WAY BETTER than NO copy

Perfect is the enemy of good

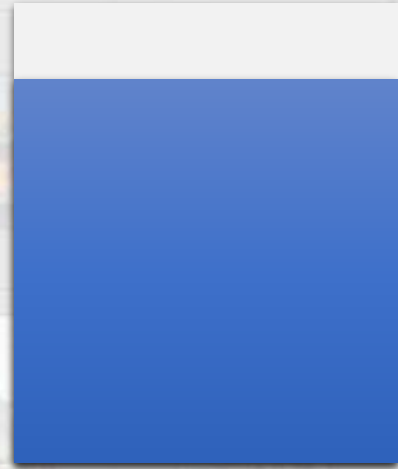
What should I backup to?



What should I backup to?

1) Storage Capacity

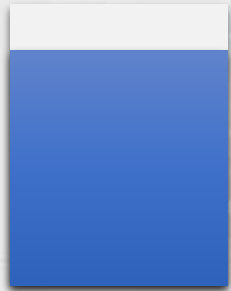
As large as your system (+ room to grow)



What should I backup to?

2) External Drives

Fast, cheap & easy (e.g. ~ \$70 for 2TB - get 2!)

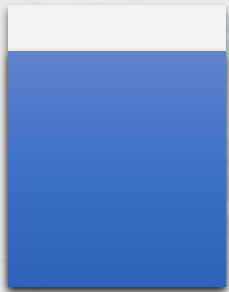


1) Storage Capacity

What should I backup to?

3) NAS (network attached storage)

Fairly cheap, slower, easy for multiple computers
e.g. Buffalo Linkstation 2TB ~ \$120



1) Storage
Capacity



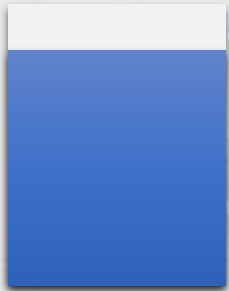
2) External
Drive

What should I backup to?

4) Cloud Backup

Wirecutter recommends Backblaze, unlimited storage! \$60 per year

E.g. 1.5 MB/sec (upload) = 5GB/hr, ~ 100GB per day



1) Storage Capacity



2) External Drive

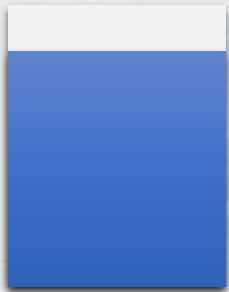


3) NAS

What should I backup to?

5) RAID storage

More reliable, more expensive, fastest, single computer - \$250 +



1) Storage Capacity



2) External Drive

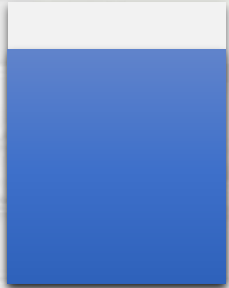


3) NAS



4) Cloud Backup

What should I backup to?



1) Storage Capacity



2) External Drive



3) NAS



4) Cloud Backup



5) RAID

Which software to manage?

Key Criteria

- All files AND complete system
- Reliable reputation to backup and restore select files and everything if needed

Which software to manage? (Mac)



- Time Machine (I'm not a Mac user so defer to Mac experts)



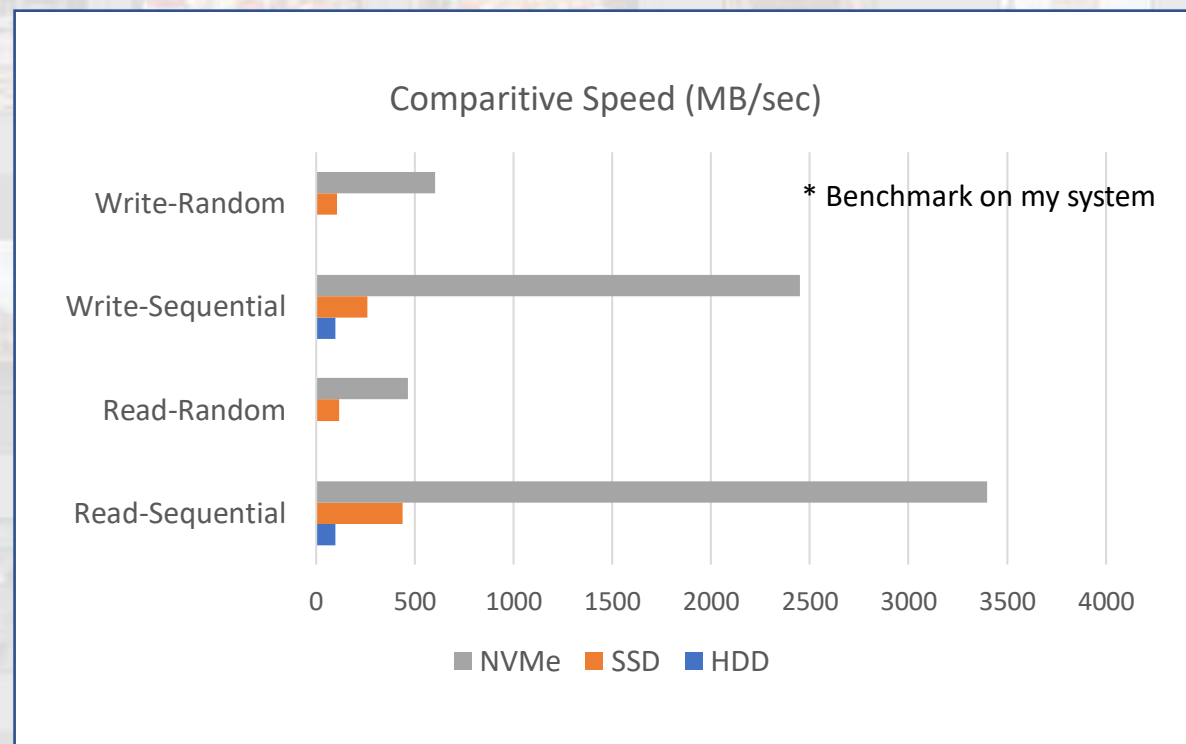
Which software to manage? (Windows)



- Personal very bad experience with Windows Backup ☹️
- PC World (2020) voted Acronis True Image top pick
 - Personally use it, supports continuous backup (\$40)
 - Creates rescue disk to restore system in case of system crash
 - Similar to Apple's Time Machine
- Online backup & restore
 - Do not have personal experience but it's a viable option
- OK option – one external drive or online – included software

How fast are internal “drives”?

- There’s an enormous difference in internal drive speeds
- HDDs, SSDs, NVMe SSD
- They significantly impact your editing, browsing, export... performance Photoshop + Lightroom
- Keep scratch disk (Photoshop) on the fastest drive
- NVMe storage at reasonable cost now: \$100 for 500GB (Samsung 970)



MB, GB, TB... Oh My!

- MB – megabytes
 - RAW files are about 20-90MB each
- GB – gigabytes
 - 1,000 MB is one GB
 - ~ 40 RAW files per GB (@ 25MB file)
- TB – terabyte
 - 1,000 GBs
 - ~ 40,000 RAW files per GB (@ 25MB file)

Multiples of bytes						V·T·E		
Decimal			Binary					
Value	Metric		Value	IEC	JEDEC			
1	B	byte	1	B	byte	B	byte	
1000	kB	kilobyte	1024	KiB	kibibyte	KB	kilobyte	
1000 ²	MB	megabyte	1024 ²	MiB	mebibyte	MB	megabyte	
1000 ³	GB	gigabyte	1024 ³	GiB	gibibyte	GB	gigabyte	
1000 ⁴	TB	terabyte	1024 ⁴	TiB	tebibyte			–
1000 ⁵	PB	petabyte	1024 ⁵	PiB	pebibyte			–
1000 ⁶	EB	exabyte	1024 ⁶	EiB	exbibyte			–
1000 ⁷	ZB	zettabyte	1024 ⁷	ZiB	zebibyte			–
1000 ⁸	YB	yottabyte	1024 ⁸	YiB	yobibyte			–

Orders of magnitude of data



Thank You!

And... good luck 😊

Resources

- Wirecutter On-line backup
 - <https://www.nytimes.com/wirecutter/reviews/best-online-backup-service/>
- PC World – review of backup software
 - <https://www.pcworld.com/article/3201971/best-windows-backup-software.html>