Backup, Backup, Backup!

Best Practices - A Follow up

Not so Famous Sayings but should be!

" **Computer users can be divided into 2 categories:**
Those that have lost data
...and those that have not lost data YET "

" **If you haven't backed up your data is like not having them at all !!** "

" **Having two backups is good, but one is the same as none.** "

General Reasons Why People Don't Backup?

- I don't have to time.

- Nothing has ever gone wrong before so why bother.

- It's too difficult or complicated…

- How do I know what I am supposed to backup or where to put it?

- I just use the computer doesn't it know what to do?

The Danger Zone

Analysis of Failing to Backup

Leading causes of **DATA LOSS**

44% Hardware or System Malfunctions

32% Human Error

14% Software Corruption

7% Computer Viruses

3% Natural Disasters

31% of data loss is due to events beyond user control.

{ That leaves a lot of room for improvement, folks. }

Analysis of Failing to Backup

DISASTROUS STATISTICS

80% of companies that do not recover from a disaster within the ten days after are likely to go out of business within one month.

75% of businesses without a business continuity plan fail within three years of their first disaster.

51% of companies close within two years of the disaster if their issue is not resolved over the course of those first ten days.

43% of businesses never reopened once a disaster struck their company.

CLOSED

Pray to the Data GODs

What & Why Backup for HOME Users?

- Most "Common" Media Content Types:
  - Documents, Pictures, Music, Videos, Movies
  - Accounting, Drafting, Schematic, Source code and other business program data files
  - Email (Outlook, Thunderbird, Gmail, Yahoo, etc.)
- Backups allow the preservation of what we have accumulated or converted to a digital format over time.

Which Do I Choose?

It Depends upon "YOU"!:

- What files are important?
- Overall size of your data?
- Your budget? Up front and/or yearly costs?
- Backups location: Local and/or Cloud?
- If it is Local then the general rule is the have storage that is three times the size of your data

General Rule of Thumb on Backup Storage

Everything is based on the size of your data today and how it will grow into the future!

The 1 x 3 rule:

– So if, your data is 250GB get a 1TB HDD

– Imaging 1TB get a 4TB HDD – Allow multiple images, then BUY another to clone to and take off-line.

– Storing critical data to USB ~25GB of data get a 64GB Flash drive for grow then BUY TWO additional to allow for secondary copies then taken off-line.

Different Backup Types

- 1. Full*
- 2. Incremental*
- 3. Differential*
- 4. Real-Time
- 5. File Synchronization
- 6. Imaging
- 7. Archive

*Generally talked about in most industries

What's the Difference?

| Backup Types	Processing	Advantages – Disadvantages (Based on 7 day Backup)
Full	On Demand Scheduled	- Allows Full Recovery from the Time of Backup -Requires additional off-line storage
Incremental	Scheduled	- Fast, Only Changed Data is Backed up - A damaged incremental backup can prevent full recovery
Differential	Scheduled	- Fast at start then gets Slower - A damaged differential only loses one days
Real-Time	Real-Time	- Immediate backup of changed - Will overwrite file(s) immediately once changed saved
File Synchronization	Scheduled Real-Time	- Backs up only changed files, needs constant index - Will overwrite file(s) upon a given schedule
Imaging	On Demand Scheduled	- Allows Fast Restoration of OS & Files from the Time of the image was created, Mountable - Requires additional off-line storage
Archive	On Demand	- Migrate to Long-Term storage both ON & OFF site - Rotation Management is key to make this efficient!

Backup Circle of Life
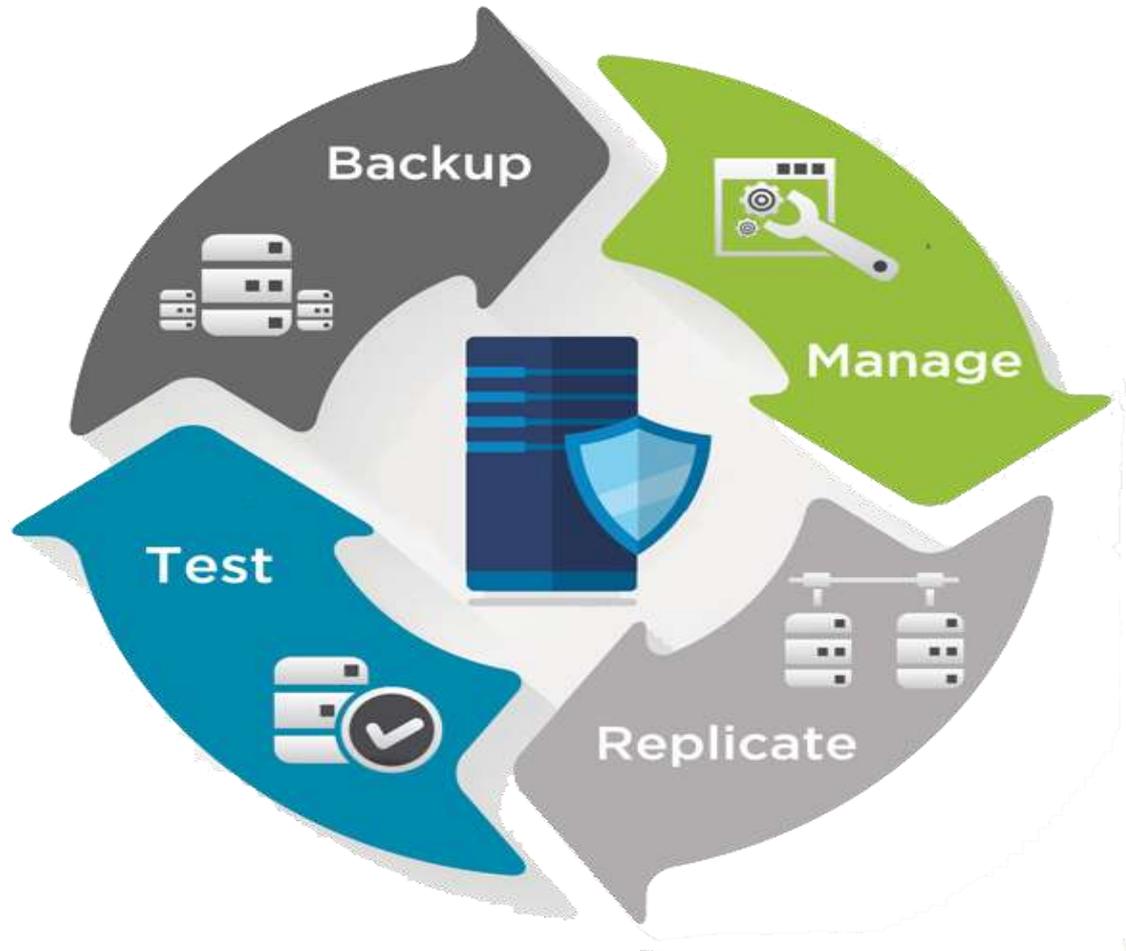
Keeping Your Data Safe

Here is the BEST full proof method of keeping your data safe.

Data protection plans include:

- Daily file backups
  - Replicate those file backups to more than one device, like a NAS or DAS, USB Flash Drives.
  - For SECURITY, replicate to another device and take it off-line
- Monthly system imaging
  - Have "*more than one storage device*" for your images on a rotating basis.
- Cloud Backup which performs daily continuous backups

Standard Backup Options & Layout
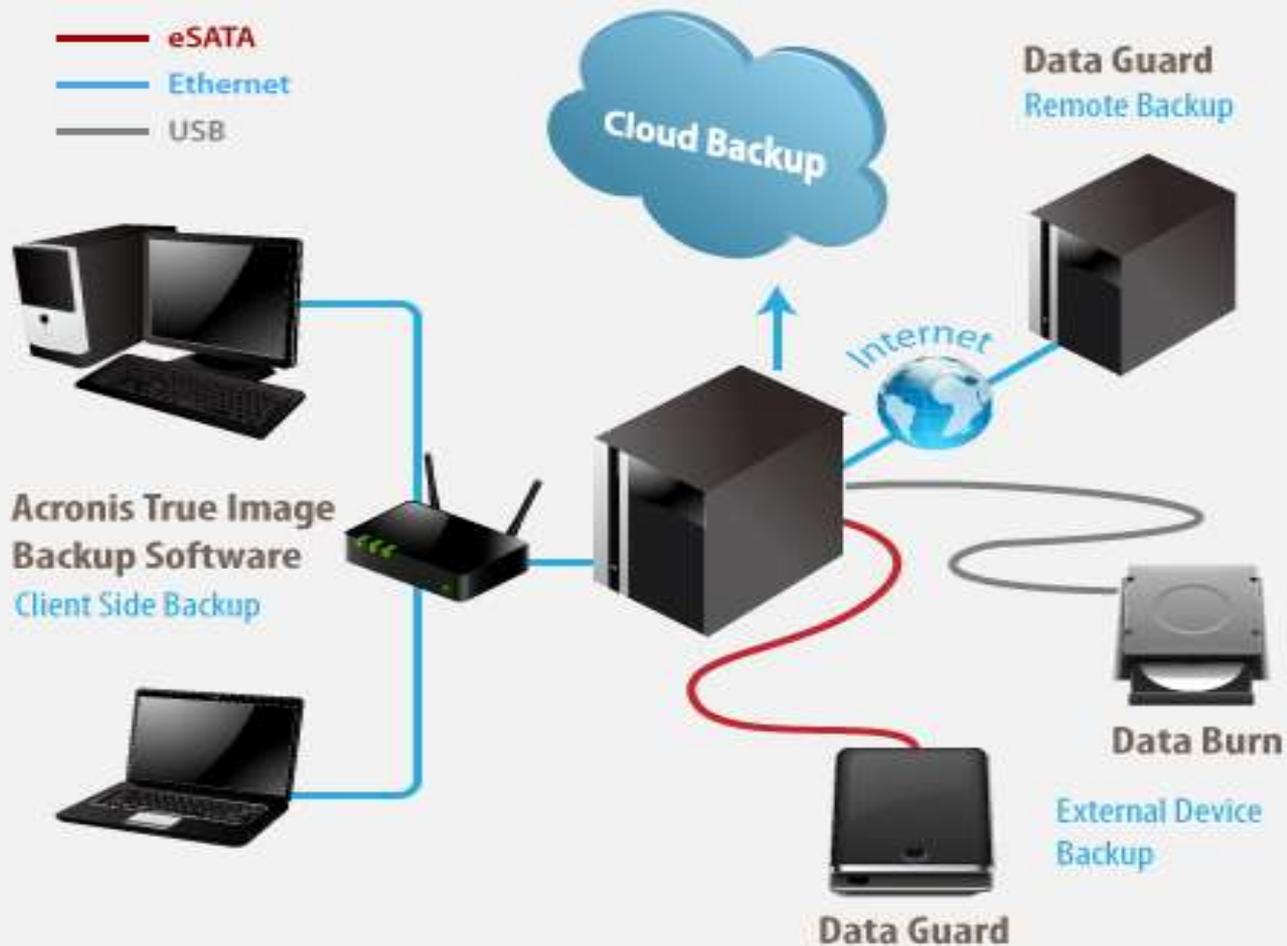
Always Check Your Backups!

Local Backup Utilities

Here are some of the most commonly available applications that are "FREE" that can be used on various platforms.

Platform	Name	GUI	CLI	Client/Server	Type	Imaging
Linux	fwbackups	Yes	Yes		File	
Linux/Win/Mac	UrBackup	Yes	-	Yes	File	Yes
Linux/Win/Mac	Grsync	Yes	Yes		File	
Linux	Rsync	-	Yes		File	
Linux	Kbackup	Yes	Yes		File	
Linux/Win	FOG	Yes	Yes	Yes	File	Yes
Linux	Lucky Backup	Yes	Yes		Sync	
Win	Yadis! Backup	Yes	-		Real-time	
Win	PureSync	Yes	-		Sync	
Win	EaseUS Todo Backup Free	Yes	-		File	Yes
Win	SyncBack Free	Yes	-		Sync	
Win	Macrium Reflect (Free Edition)	Yes	-		File	Yes
Win	FBackup	Yes	-		File	
Win	FreeFileSync	Yes	-		Sync	

Cloud Providers

Cloud Backup Solutions

	Crash Plan	Carbonite	Mozy	BackBlaze	SOS	SpiderOak
Ext Backup	Yes	No	Win	Yes	Yes	Yes
Sup. Linux	Yes	No	Yes	Win, Mac	Win, Mac	Yes
Multiple Sets	Yes	No	No	Yes	Yes, Local	Yes
Set Ver Ret.	Yes	No	No	No, 30-days	No	Yes
CPU usage	Yes	No	Yes	Yes	Yes, Manual	Yes
Keep Delete	Forever	30-days	60-days	30-days	?	?
Multi-Ver	Unlimited	90-days	180-days	30-days	Unlimited	Unlimited
Cont. Backup	Yes	10min/24hr	12x/day	1x/day	Yes	Yes
Storage	Unlimited	250GB	10GB	Unlimited	50GB	150GB
Encryption	256-AES	128-bit	256-AES	256-AES	256-AES	256-AES
Cost/yr./Dev	$120.00	$72.00	$109.89	$60.00	$45.00	$59.00

Cloud Fail!

Slow Cloud!

Got Bitcoins?

** Synergy of Opposites**

Your Backups are in Your Hands

So…. Backup NOW!
Or
Pay Later $$$$.$$