



PWC G8 Gals@Technology

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Are You Tired Of Me Talking About
Backups Yet?



Current Topics

- Nasty phishing schemes around to exploit the coronavirus fears.
- WHO (World Health Organization)
"Criminals are disguising themselves as WHO to steal money or sensitive information. If you are contacted by a person or organization that appears to be from WHO, verify their authenticity before responding,"



Current Topics

- Microsoft Windows Updates will now follow a yymm naming scheme. Next update is Version 2004 due for general release in April 2020.
- California's New Consumer Privacy Act (aka CCPA) is the first American attempt to follow the European lead with General Data Protection Regulation (aka GDPR)
 - Right to know what personal information is being collected, used, shared, or sold both as categories and specific pieces of personal information
 - Right to delete personal information held by businesses and by extension, business's service providers
 - Right to opt-out of sale of personal information. Children under 16 must provide opt-in consent and a Parent must opt-in for children under 13.

HERE'S OUR CURRENT DISASTER RECOVERY PLAN



Some Backup is Better Than No Backup

- Manual copy
 - Full backup
 - Incremental backup
 - Differential backup
 - Mirror backup
-
- Rule of 3 – on your computer, somewhere else in the house, and in the cloud

Destination Media

- USB Device
 - 32 GB USB Flash Drive - \$6.50
 - 64 GB USB Flash Drive - \$10.99
 - 128 GB USB Flash Drive - \$18.99
 - 256 GB USB Flash Drive - \$34.99

 - 2TB external drive - \$59.99
 - 5TB external drive - \$109.99

 - 1TB external SSD - \$169.68
 - 2TB external SSD - \$307.99



Destination Media

- Cloud space
 - Microsoft OneDrive - \$1.99/mnth/50GB
 - Google Price - \$1.67/mnth/100GB
 - Dropbox - \$8.25/mnth/1000GB
 - Amazon Drive - \$19.99/yr/100GB
 - iCloud - \$0.99/50GB





WHAT IF I TOLD YOU

**"THE CLOUD" IS JUST
SOMEONE ELSE'S COMPUTER.**

Backup Utilities

- Carbonite (<https://www.carbonite.com/>)
 - Automatic, cloud based
 - One computer
 - \$6.00/mnth, unlimited cloud backup
 - \$9.34/mnth, add external drive backup + cloud
 - Multiple computers - \$24/mnth, 250GB
 - Additional storage at additional cost



Backup Utilities

- Acronis (<https://www.acronis.com/en-us/>)
- Utility only (license key required)
 - 1 computer - \$38.99
 - 3 computers - \$45.00
 - 5 computers - \$49.98
- Acronis cloud available for additional cost
 - 250GB free, additional 500GB - \$20



DIY

- Photo Backup Stick (<https://photobackupstick.com/>)
 - iPhone/Android/Windows/Mac
 - Only photos and video
 - Removes duplicates
 - 8GB - \$59.95
 - 256GB - \$169.95



- Copies user data contents but NOT system and applications
- Connect to destination
- drag c:/{This PC}/c:/Users/{Your name} to Destination
- Demo



Full Backup

- Full Backup of all data, application, setting, etc.
- Records all content necessary to restore but not the full “context” of the disk
- Full backup take most storage and most time
- Commercial packages

- Demo

Incremental Backup

- Initial full backup and then just back up things that change
- Uses less storage and less time but restoration is time consuming
- A “synthetic full backup” uses all incremental backups to rebuild a usable full backup to reduce restore time

Differential Backup

- Similar to Incremental Backup
- Initial full backup with each subsequent backup copying all data changed since last full backup
- Compromise between a bit more storage and backup time for much faster restoration time

A comparison of different types of backup

TYPE/BACKUP	FULL	MIRROR	INCREMENTAL	DIFFERENTIAL
Backup 1	All data	All data selected	–	–
Backup 2	All data	All data selected	Changes from backup 1	Changes from backup 1
Backup 3	All data	All data selected	Changes from backup 2	Changes from backup 1
Backup 4	All data	All data selected	Changes from backup 3	Changes from backup 1

Benefits and drawbacks to types of backup

TYPE	BENEFITS	DRAWBACKS
Full	<ul style="list-style-type: none">■ Provides full copy of data set■ Offers arguably best protection	<ul style="list-style-type: none">■ Time-consuming■ Requires lots of storage space
Incremental	<ul style="list-style-type: none">■ Less time and storage space than full backup	<ul style="list-style-type: none">■ Time-consuming to restore■ Need all the backups in backup chain to restore
Differential	<ul style="list-style-type: none">■ Shorter restore time than incremental	<ul style="list-style-type: none">■ Can grow to much bigger size than incremental
Synthetic full	<ul style="list-style-type: none">■ Reduced restore time■ Less bandwidth usage	<ul style="list-style-type: none">■ Newer, so not as well-known
Incremental-forever	<ul style="list-style-type: none">■ Availability of data■ Automated restoration process	<ul style="list-style-type: none">■ Newer, so not as well-known■ Need all the backups in backup chain to restore

Mirror Backup (aka Disk Cloning)

- Full sector-by-sector copy of disk media
- Most complete, most storage, full restore of **EVERYTHING**



This wasn't supposed to happen to me!!!!!!!!!! I really was going to start backing up tomorrow.

