



BackUp Strategies

ApplePickers
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Why Backup?

- ✓ HDDs fail. It's not a matter of *if*; it is a matter of *when*
- ✓ Disk errors
- ✓ Possibility of theft, vandalism, or fire
- ✓ Stupid mistakes in deleting files

Overview

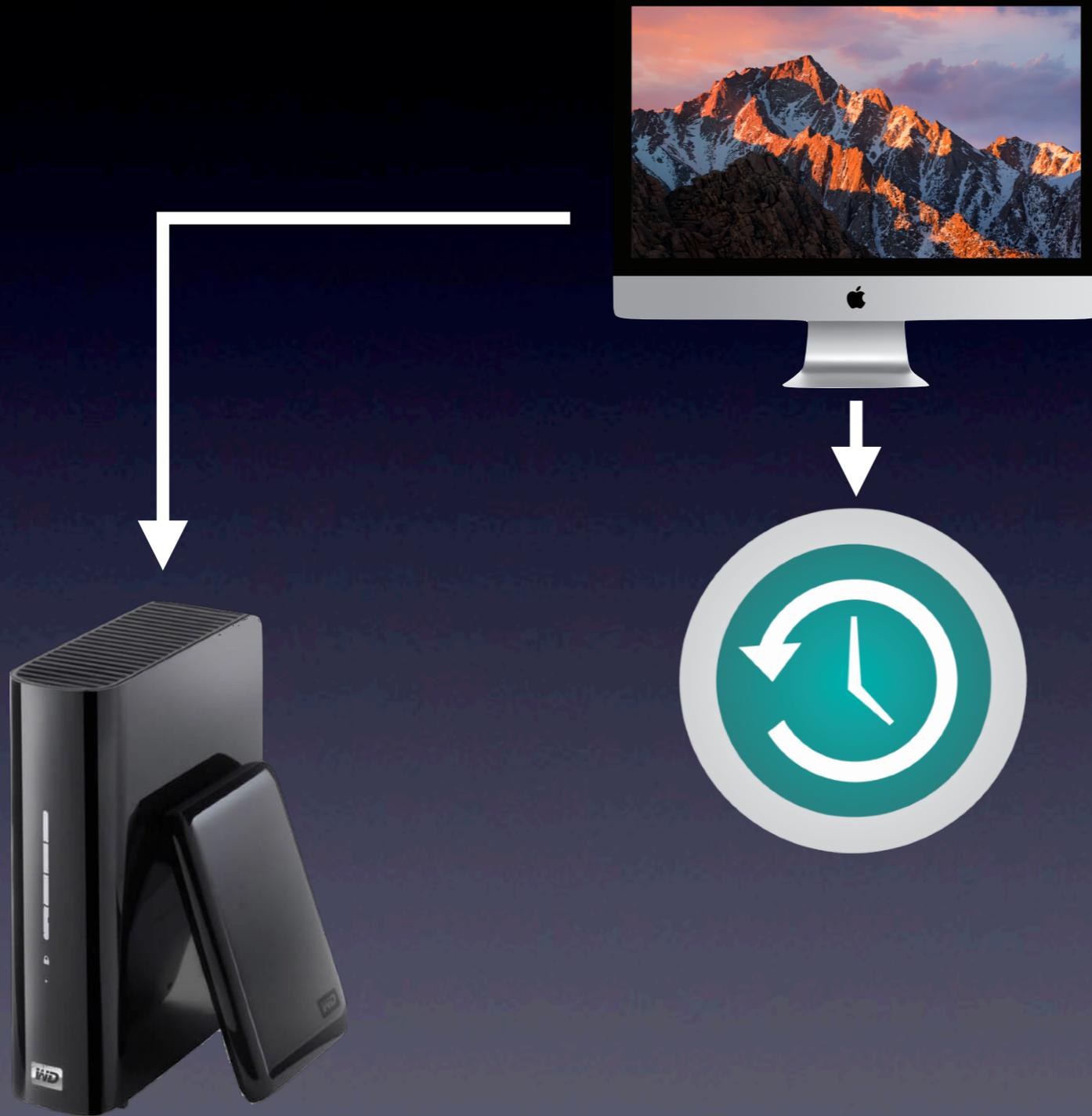


Overview



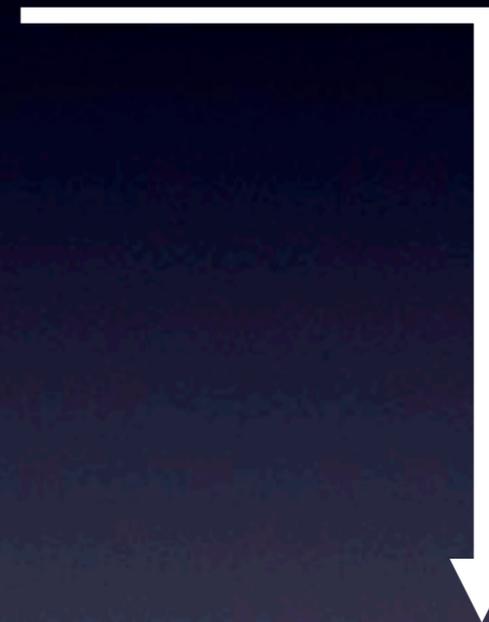
Time Machine

Overview



One or more external drives

Overview



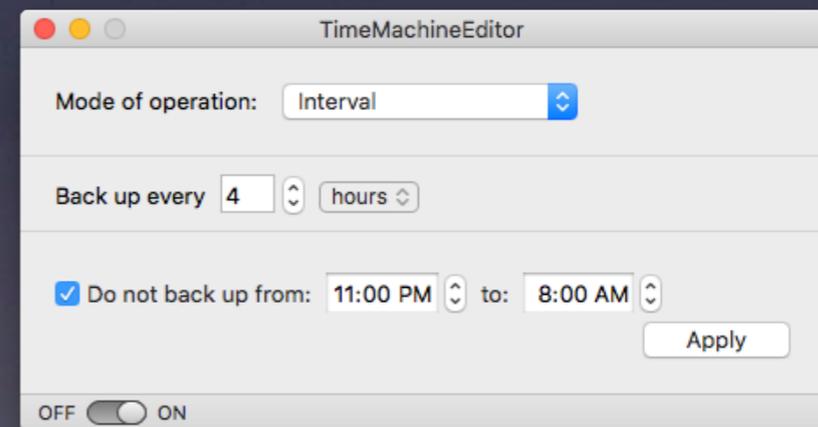
Time Machine

✓ Pros

- Built into OS
- Easily configured
- Minimal resource impact

✓ Cons

- Limited options
- ✦ TimeMachineEditor
- Sometimes unreliable



Local Options

- ✓ Third-party software ranges from free to ~\$100
- ✓ Requires an external HDD
- ✓ Fixed Cost
- ✓ Best Practices
 - Multiple copies
 - Keep one or more offsite
 - Setup your own rotation scheme

Local Options

| | <u>Carbon Copy Cloner</u> | <u>SuperDuper!</u> | <u>GetBackUp Pro</u> |
|--------------------|---|---|---|
| |  |  |  |
| Price | \$40 | \$28 | \$0 (V2) |
| Time Schedule | Y | Y | Y |
| Synchrhonize | Y | Y | Y |
| Clone | Y | Y | Y |
| Incremental Update | Y | Y | Y |
| Backup Subset | Y | Y | Y |
| Reliability | +++ | +++ | + |
| Speed | ++ | ++ | +++ |

Get Backup 2

New Backup Project

Backup Clone Synchronize

iPhoto Mail iTunes Documents Address Book

| Content | Kind |
|-----------------------------|--------|
| AddressBook | -- |
| com.apple.AddressBook.plist | 11 KB |
| com.apple.iPhoto.plist | 25 KB |
| com.apple.mail | -- |
| com.apple.mail.plist | 1 KB |
| Documents | -- |
| iPhoto Library.photolibrary | bundle |
| Mail | -- |

+ - View Content Properties Restore

Ready

New Backup Project Never done Manual

New cloning project

Backup Clone Synchronize

Source: External Main (Us...)
Destination: External Backup (...)

! Destination has insufficient space (help)

| Folders & Files | Date Modified | Size |
|-------------------------|---------------|----------|
| .DS_Store | Mar 21, | 52.00 KB |
| .PKInstallSandboxManage | Apr 7, 2017, | -- |
| .Trashes | Feb 26, 2017, | -- |
| .Volumelcon.icns | Jan 9, 2016, | 67.83 KB |
| AfterShot 3 | Nov 29, | -- |
| Apexian SyncedFolder | Dec 3, 2016, | -- |
| Applications | Apr 7, 2017, | -- |
| Christmas | Nov 29, | 1.01 MB |
| Corel AfterShot | Nov 23, | -- |
| CSR Racing.app | Dec 29, | Bundle |
| Downloads | Apr 8, 2017, | -- |
| External Movies | Nov 5, 2015, | -- |
| GraphicConverter.app | Oct 26, 2013, | Bundle |

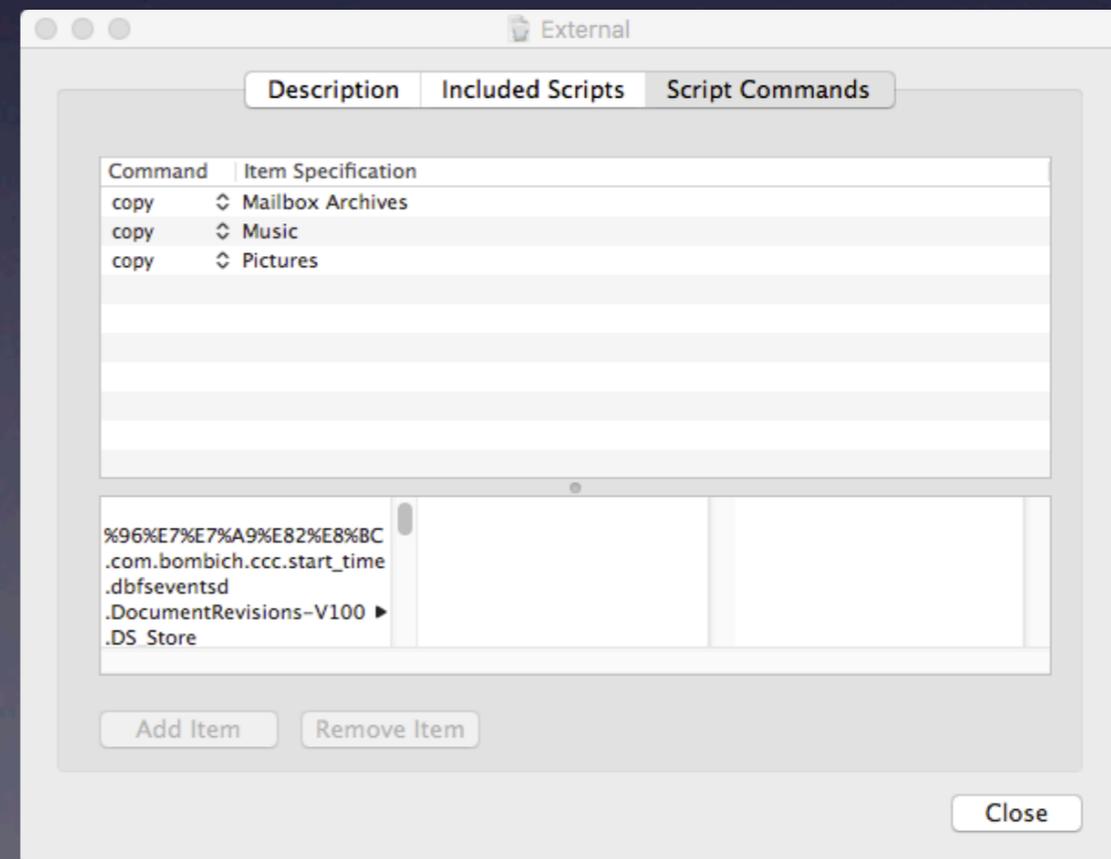
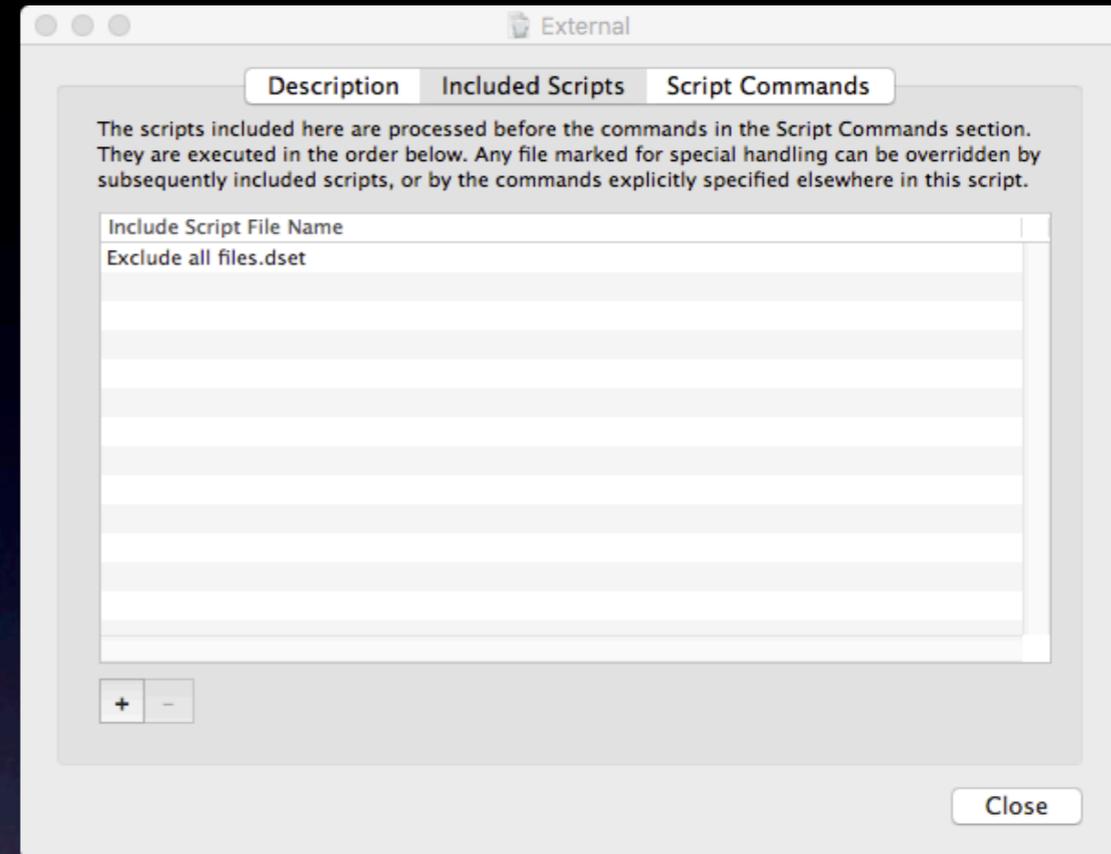
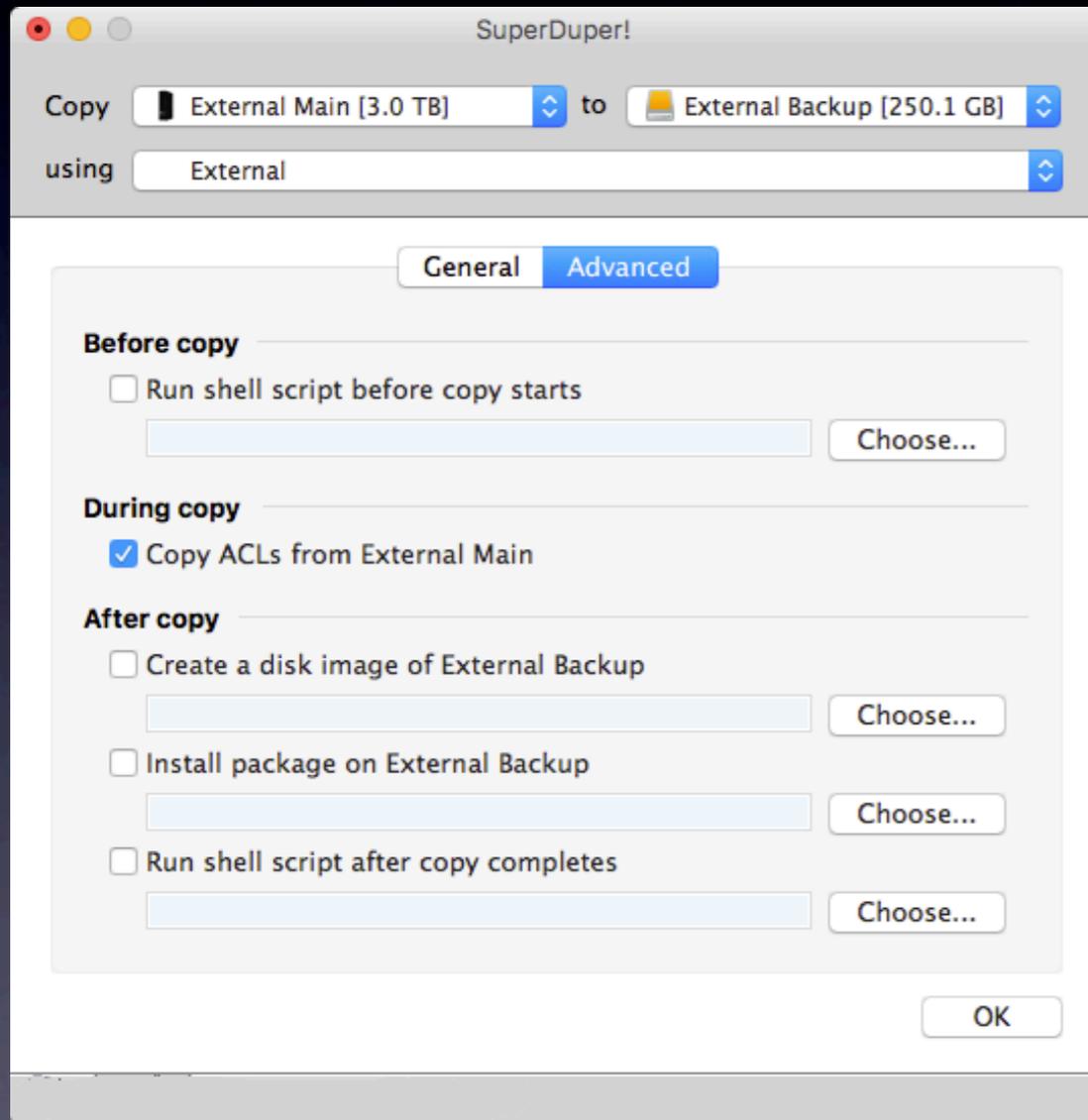
Properties

Ready

New cloning project Never done Manual

1. Macintosh HD to Mac HD B... Aug 8, 2016, 1:39 PM Manual

SuperDuper!



Cloud Options

✓ Pros

- Always safe no matter what happens locally

✓ Cons

- Resource impact varies
- Security may be a concern
- Continuous costs
- Storage of ≥ 500 GB can get expensive
- SLOW

Backblaze



✓ Encryption rating: Very good

✓ \$50/year

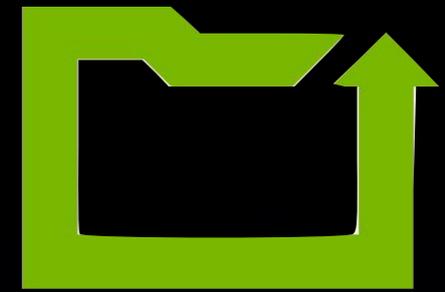
✓ Pros:

- Data is encrypted before and in transit
- Website lets you access encrypted backups
- Platforms: OS X, Windows, iOS, Android

✓ Cons:

- Password is transmitted for recovery
- Lacks a client that can restore and browse with local encryption keys
- Unique keys can be unlocked with passphrase for master key

CrashPlan



✓ Encryption rating: Excellent

✓ Free version can backup to a friend's networked computer

✓ Pros:

- Data is encrypted before and in transit
- Password is not transmitted for recovery
- Website lets you access encrypted backups
- Platforms: OS X (Java app), Windows, Linux, iOS, Android, Windows Phone

✓ Cons:

- The archive key reset via reminder question is not a secure method
- CrashPlan for Home requires a Java app, with security, reliability, usability issues

SpiderOak ONE



✓ Encryption rating: Very Good

✓ Pros:

- Data is encrypted before and in transit
- Password is not transmitted for recovery
- Website lets you access encrypted backups
- Highly granular shared secure data areas
- Platforms: OS X, Windows, Linux, iOS, Android

✓ Cons:

- If you want to share files or use the website, you have to enter the password
- Comparatively expensive \$129/yr for 1TB

Comparison

| Backblaze | Carbonite | Mozy | CrashPlan | iDrive |
|-----------------------------------|---|--|--------------------------------------|--|
| \$50/Yr | \$59/Yr | \$59/Yr | \$59/Yr | \$49.50/Yr |
| Backed up by default ALL DATA | Backed up by default PARTIAL DATA | Backed up by default PARTIAL DATA | Backed up by default PARTIAL DATA | Backed up by default PARTIAL DATA |
| Data storage limit UNLIMITED | Data storage limit UNLIMITED | Data storage limit 50 GB | Data storage limit UNLIMITED | Data storage limit 150 GB |
| Maximum file limit UNLIMITED | Maximum file size FILES OVER 4GB MANUALLY BACKED UP | Maximum file size UNLIMITED | Maximum file size | Maximum file size 10 GB |
| External USB Drives YES | External USB Drives HOME PLUS VERSION REQUIRED | External USB Drives YES | External USB Drives YES | External USB Drives ONLY THROUGH SCHEDULED BACKUPS |
| Maximum upload speed UNLIMITED | Maximum upload speed UNLIMITED | Maximum upload speed UNLIMITED | Maximum upload speed UNLIMITED | Maximum upload speed UNLIMITED |
| Locate lost computer YES | Locate lost computer No | Locate lost computer No | Locate lost computer No | Locate lost computer No |
| Personal Encrypt Key YES | Personal Encrypt Key WINDOWS ONLY | Personal Encrypt Key MOZY PRO REQUIRED | Personal Encrypt Key YES | Personal Encrypt Key YES |
| Native Mac/PC Client YES | Native Mac/PC Client YES | Native Mac/PC Client YES | Native Mac/PC Client No | Native Mac/PC Client YES |

Summary

- ✓ A disk-cloning mechanism (CCC, SuperDuper, etc.) is great for making a bootable backup copy. But this is not suitable for remote archives (due to high bandwidth requirements) and it is probably not suitable for taking "snapshot" backups throughout the day. If the media is left on-line (necessary for scheduled backups) then there may be issues with backups getting corrupted by system glitches, bugs and malware. If the media is normally off-line, then someone must take the responsibility to switch it on, make backups and then switch it off again, and do this often enough for the backups to be meaningful
- ✓ Off-site backup mechanisms (Carbonite and others) are great for recovering from true disasters - where the computer and/or media are lost, stolen or destroyed. With it, you can, in a worst case, buy new hardware, set up in a new location, and restore your backup. But these services can be slow - especially for the initial backup - due to the fact that everything must be transferred over the Internet. And there are potential issues with security.
- ✓ More traditional local backup systems (Retrospect and others) make local backups that are not bootable clones. They can be more efficient for incremental backups. They can use a variety of media for storage (remote servers, hard drives, tape drives, optical media, etc.) and can store multiple backup sets on a device. They are good for archival backups and for backups where the media will be stored remotely. But they tend to use proprietary data formats (so you'll need a current license to read/restore your archives) and they can be expensive - especially for products designed to work on servers.

Summary

- ✓ Snapshot systems (Time Machine, some file server OS's) are not really a backup system. They make periodic "snapshots" of the entire file system and provide a mechanism for retrieving old versions of files. While some implementations can keep old snapshots for months or years, some are limited to a small number of snapshots, which are constantly recycled.
 - Off-line and archival storage is really not an option because the media must be on-line and accessible at all times. For some implementations, the snapshot storage is integrated with the file system itself and therefore offers no protection against hardware failure.
- ✓ Remote file systems (iCloud, DropBox, Google Drive, etc.) are good for storing important files elsewhere, but they tend to be too expensive (or too bandwidth-hungry) to be useful as a part of a whole-system backup regimen.
 - A script that periodically syncs a few key folders to a remote server can be useful as a quick-and-dirty off-site backup mechanism, as long as the data set doesn't get too large.

Final Thoughts

- ✓ Bus-powered portable drives have increased convenience for backups. They're easily swapped and stored, and you can get 2TB drives now for reasonable prices.
- ✓ M-Disc drive.
 - Slow but should be robustly archival
 - Good for making permanent backups/archives that you store in multiple locations for redundancy/reliability.
 - Very slow at writing data.
- ✓ Cloning to an SSD can be quite a bit faster than an spinning hard drive
- ✓ An mSATA SSD in a tiny USB 3 enclosure is handy (easy to keep in a pocket) and ideal for traveling needs.
 - However consider access to sensitive information (e.g. bank access/ passwords) vs. search issues with authorities at checkpoints/borders.