

# Backup and Data Recovery

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# How much of your life is stored locally on your computer?

- Photos and Videos
- Emails
- Personal and Business Documents
- Music
- Contacts
- Memories

# If something happened to your computer, would your information be safe?

- Disk failure happens often.
- Other catastrophic events can cause data loss:
  - Fire
  - Water damage
  - Power surges
- Viruses can cause data loss:
  - Mostly a Windows problem
  - CryptoLocker, CryptoWall, and other “RansomWare”
  - Avoid complacency.

# Protecting your data is easy (and cheap.)

- Time Machine was introduced with Mac OS 10.5.
  - Easiest way to backup a desktop computer, guaranteed.
- Cloud backup solutions are affordable and simple.
  - CrashPlan starts at \$60/year.
  - iCloud storage is around \$50/year for 200 GB.

Identify Your Goals

# Which backup strategy is right for me?

- You should choose a backup strategy that fulfills your goals.
- Everyone's needs are different.
- Some users may have two or more backup strategies in place.

# Common Backup Goals

- Decrease the chances of data loss.
- Provide a file versioning solution.
- Protect against environmental catastrophe.
- Allow immediate recovery with no loss in productivity.

# Decrease the Chances of Data Loss

- An obvious goal of any backup solution.
- Most simply implemented by having a second copy of your data on a second hard disk that is stored with the computer.
- In the event the computer's primary hard disk crashes, a recent backup can be recovered from the external hard disk.



# File Versioning

- What if you make an unwanted change to a file and don't realize until your backup has taken place?
- A file versioning solution can allow you to restore a file as it was stored days, weeks, months, or even years ago.
- More concerned with protection against accidental changes to a file than equipment failure.

# Protection from Environmental Catastrophe

- Fires, floods, theft and other events can cause data loss.
- Often, a backup stored with or near the computer will also be affected by an environmental catastrophe.
- Off-site backup provides protection from this type of data loss.
- Implementation may vary:
  - Backups can be stored with friends, family or in safe deposit boxes.
  - Cloud-based services can be used.

# Immediate Recovery

- “Time is money.”
- A concern for production computers with high-availability needs.
- A bootable clone of your startup disk will fulfill this goal.
- Some examples of implementation:
  - SuperDuper
  - RAID Mirroring

Select a Solution

# Solutions we'll cover today...

- Time Machine
- CrashPlan
- iCloud
- SuperDuper

# Time Machine

- Introduced with Mac OS 10.5
- Backs up hourly to an attached disk or networked Time Capsule.
- By far the simplest backup solution for Macintosh.
- Solves many common backup goals with one solution.



# Time Machine

- **Data protection:** Time Machine makes a second copy of the data stored on your computer.
- **File Versioning:** Time Machine creates versioned backups that are very, very easy to restore.
  - This is a very powerful feature that is so simple to use.
- **Environmental Catastrophe:** Time Machine can now backup to multiple drives.
  - Keep one disk attached and the other in a separate location.
  - Rotate backup disks on a schedule.
- **Immediate Recovery:** Time Machine backups can be restored to a computer booted from Mac OS install media for Internet Recovery.
  - ... it still takes a while to get everything copied back over.

# Time Machine

- No matter what other backup solutions you implement, you should probably use Time Machine as a starting point.
- File recovery is faster than from cloud-based services.
- Versioning is powerful and well-implemented.
- The ability to restore while booted from install media or Internet Recovery is very convenient.



# CrashPlan

- Focused on cloud storage, but not limited to cloud storage.
- Powerful backup engine allows for multiple backup destinations:
  - CrashPlan Cloud
    - Plans start at \$60/year for one computer, unlimited storage.
  - Another computer
    - Backup your laptop to your desktop, your office computer to your home computer, etc.
  - A local disk
    - Somewhat redundant on Macs thanks to Time Machine, but its worth mentioning.



# CrashPlan

- CrashPlan fulfills many backup strategy goals.
- Data protection: CrashPlan makes a second copy of your data.
- File versioning: CrashPlan can make versioned backups but it isn't as easy to use as Time Machine.
- Environmental catastrophe: CrashPlan allows you to store your backups on their own hosted cloud or on another computer.

# CrashPlan

- The biggest limitation of CrashPlan is your Internet connection.
- Internet speed and bandwidth caps can make off-site backup of the Internet difficult or impossible for some.
- It can take weeks to upload a full initial backup and days to download one if the need arises.
  - Seeded backups and “Restore-to-Door” are options.

# SuperDuper



- SuperDuper is a disk cloning solution.
- You can create a bootable backup of your startup disk on an external hard drive.
- Schedule backups at regular intervals or perform manually before major upgrades for easy downgrades if necessary.

# SuperDuper

- SuperDuper fulfills a specific backup goal (immediate recovery.)
- If your startup disk fails or becomes unbootable, hold the option key down at startup, select your copy, and you are back in production in practically no time.
- *Not* a single solution for backup.
  - Accidental file changes or deletions are replicated in the backup.
  - No true versioning.
  - Any “problem” (ransomware, failed update, etc.) can easily get cloned to your backup disk before you can prevent it.
- Use disk cloning only in combination with another backup strategy.

