

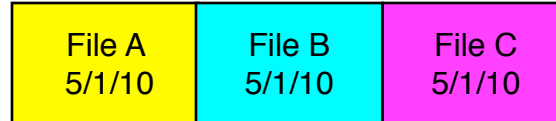
A graphical illustration of the differences between a Time Machine (Incremental) backup and a SuperDuper (Clone) backup, and recovery from some computer disasters

There are only two types of computer users; those who have lost data, and those who are going to lose data.

Anonymous

For this illustration, we are going to simplify things and assume we have only 3 files on our computer. (They can be documents, applications, emails, system files or whatever.)

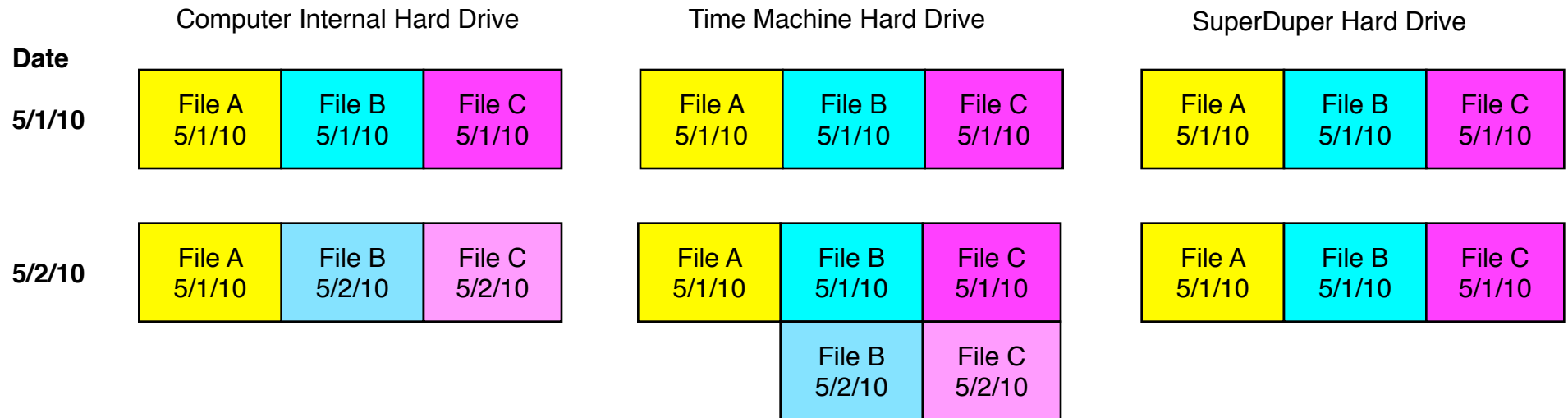
Here is what our computer's internal hard disk looks like at the start.



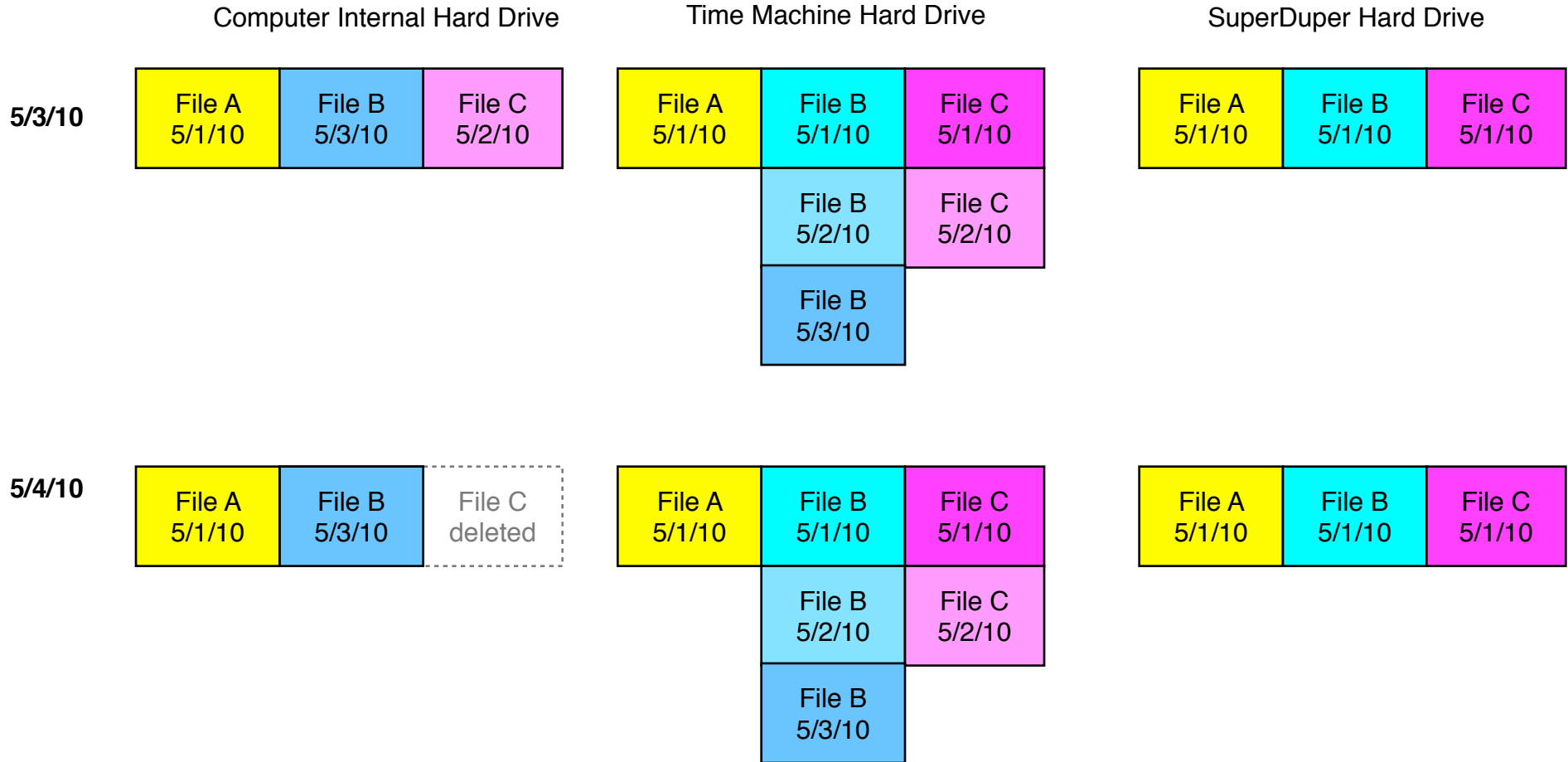
We now connect two external Hard Disks (aka Hard Drives). The backup schedule for Time Machine is automatic, as noted below, and we set up SuperDuper to back up once a week. *For suggestions on what size external disk(s) to use, see Appendix I.*

The contents of the 3 hard disks are shown below as time goes by and we modify files. Whenever we modify a file the date and shade of color will change. If we delete a file it will go away.

We will assume we only edit a file once per day, but in reality, Time Machine keeps hourly backups for the first 24 hours, daily backups for the next week, then weekly backups until the external disk runs out of space.



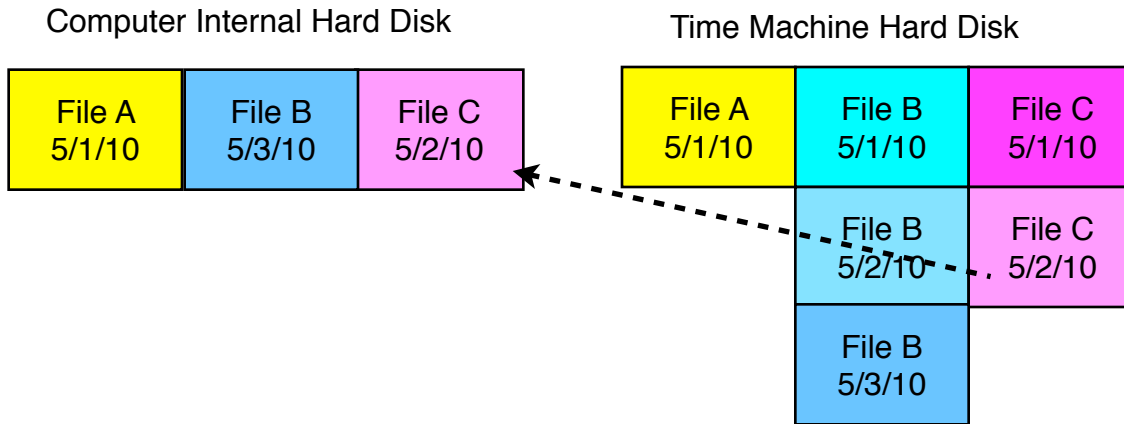
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5/5/10 **Disaster Scenario 1. OOPS! We shouldn't have deleted File C on 5/3/10. We need it.**
What are our options for recovering it?

We can Enter Time Machine and recover either the 5/1 or 5/2 version of File C



or we can go to the SuperDuper hard disk and copy File C to the Computer's internal hard disk, but only the 5/1 version is available. If we had made another clone backup after deleting File C, then we would be completely out of luck.



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5/5/10 Disaster Scenario 2. There appears to be a serious problem with OS X. Applications are not running properly, and some of our files can't be found. Perhaps the computer won't even boot up.

What are our options? a) Restore the entire internal hard disk from Time Machine or b) Restore the entire internal hard disk from the SuperDuper clone. Major **advantages** and **disadvantages** of each option are highlighted.

Note: I'm just going to outline the steps, estimate the time involved and show what the results are. References to instructions on how to do it are in Appendix II.

With either option, first we check and/or repair the the internal hard disk with Disk Utility, to make sure it is functioning properly and our problems are not due to a hardware problem with the disk.

a) Restore from Time Machine.

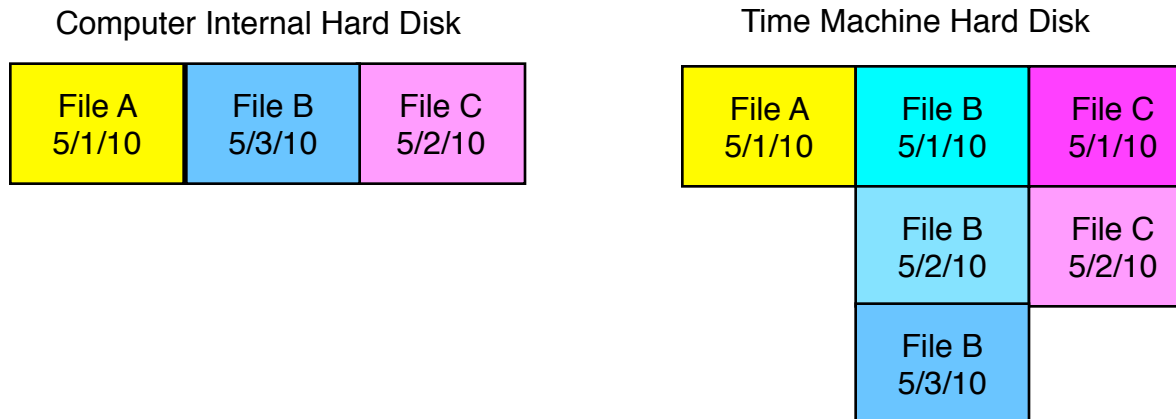
Boot up machine from OS X install disk (The Time Machine backup is not bootable.) (5 to 10 min.)

Choose Restore from Time Machine in the Install menu.

Choose the date and time, in this case 5/3, to restore the internal hard disk to. (Before the problems started)

Wait until the restoration process is finished to use the computer again (Several to many hours)

Result:



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b) Restore from SuperDuper Clone

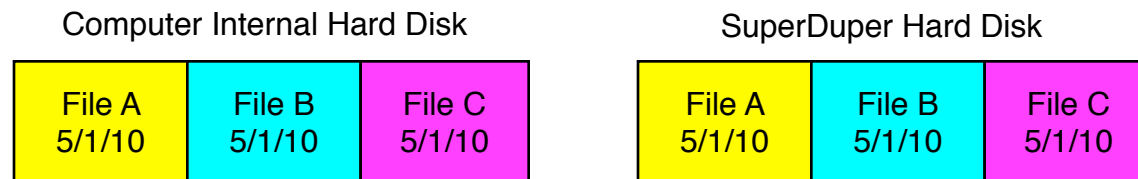
Boot up machine from SuperDuper clone disk (1-2 min.)

At this point you can actually use your computer normally, and wait to do the internal disk file restoration at a more convenient time if you wish.

Follow the instructions in the SuperDuper user manual to restore the internal hard disk (Several to many hours.)

Any changes to files made after the clone date are lost. (Unless you also have a Time Machine backup from which you can recover these files.)

Result:



5/5/10 Disaster Scenario 3. The internal hard disk started making strange noises, then died completely.

We tried to check and/or repair the the internal hard disk, but couldn't.

What are our options? We need to replace the internal hard disk then: a) Restore the entire internal hard disk from Time Machine or b) Restore the entire internal hard disk from the SuperDuper clone. Major **advantages** and **disadvantages** of each option are highlighted.

Note: As before, I'm just going to outline the steps, estimate the time involved and show what the results are. Details of how to do it are in Appendix II.

a) Restore from Time Machine.

Replace internal hard disk in the computer (Days to Weeks)

Boot up machine from OS X install disk (The Time Machine backup is not bootable.) (5 to 10 min.)

Choose Restore from Time Machine in the Install menu.

Choose the date and time to restore the internal hard disk to. (Before the problems started)

Wait until the restoration process (several to many hours) is finished to use the computer again

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b) Restore from SuperDuper Clone

Boot up machine from SuperDuper clone disk (1-2 min.)

At this point you can actually use your computer normally, and wait to do the internal disk replacement and file restoration at a more convenient time if you wish.*

Replace internal hard disk in the computer (Days to Weeks)

Follow the instructions in the SuperDuper user manual to restore the internal hard disk (several to many hours).

Any changes to files made after the clone date will be lost. (Unless you also have a Time Machine backup from which you can recover these files.)

In both options, the contents of the hard disks at the end of the repair and restore processes would be the same as shown in Scenario 2.

*You are still going to be without your computer at some point for the length of time it takes to have the internal disk replaced. *If you have a spare computer, note that booting up a second computer with the clone from a different machine generally does not work. However, you can use Migration Assistant and an existing Time Machine or SuperDuper backup to restore to a different computer.*

Bottom Line

You need Time Machine backup if you need/want to recover deleted individual files/folders or older versions of files/folders going back several months or more.

You need a bootable clone backup like SuperDuper if you need/want to be able to continue working on critical projects until a convenient repair opportunity in the event of an internal hard disk failure.

I recommend having both types of backup.

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Appendix I. Suggested Backup Disk Sizes

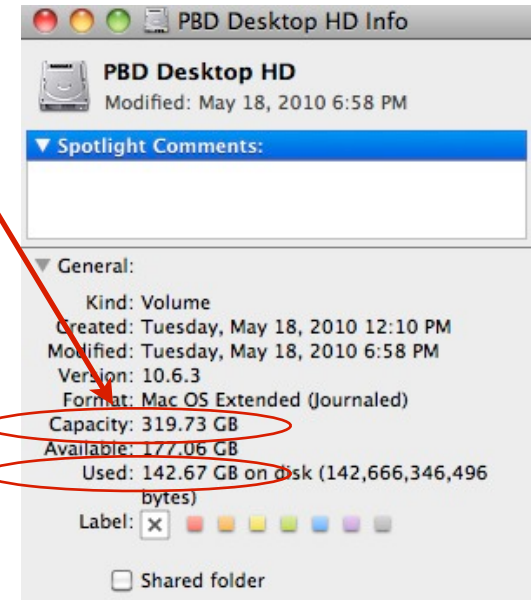
First find out how much data you have on your internal hard disk. Select it's icon on your desktop, right-click and select Get Info.

If you think you will eventually fill up most of your internal hard disk, use this number minus 10 GB (you never want to have less than 10 GB free on your internal drive, or computer performance will suffer).

If you don't think you will add much more than you already have on you internal hard disk, use this number plus about 20% just to be safe.

For Time Machine, about 3 X whichever number you choose should give you at least 6 months of backups. (It does depend on how often you edit files, too.)

For SuperDuper or a similar clone-type backup, try to get close to the capacity number (less 10 GB). In this case, for instance, I would use at the very least a 250 GB external disk, or better, a 500 GB disk partitioned into 2 Volumes, one 320 GB for the clone, and the remaining space as a separate volume for general data storage or some other purpose.



Appendix II. Links to instructions

Repair/Check Internal Hard Disk - <http://docs.info.apple.com/article.html?path=Mac/10.5/en/8492.html>

Restore from Time Machine - <http://docs.info.apple.com/article.html?path=Mac/10.5/en/15638.html>

Restore from SuperDuper clone - Download the SuperDuper User guide under "Want more information?" on this page <http://www.shirt-pocket.com/superduper/superduperdescription.html>

Set up SuperDuper - The User Guide, see above

Set up Time Machine - <http://docs.info.apple.com/article.html?path=Mac/10.5/en/11421.html>