couple of useful information snippets on the subject of hard drives and disk related tech talk.

## What is HFS+ format?

First let's take a short trip back to 1986.

Two years after the release on the renowned 1984 Mac 128k, Apple introduced the new Hierarchical Filing System [HFS] to the Mac ranges. Being that most hard drives [typically 80-100megs] were much smaller than today's Gigabyte beasts the HFS format worked very well.

If you can't or still have not updated your hard drive don't worry you can still run all your programmes.

Hierarchical Filing System Plus [HFS+] without getting too technical the simple reason Apple changed formats was space and efficiency. The old HFS format is 13 years old and these days it is possible to set up a drive so it uses smaller allocation blocks. Saving files will take up less space under HFS+. When I formatted a 2 Gigabyte [gig] hard drive on my 8100 I had 1.4 gig of files and applications saved. After upgrading the drive the files only took up 1.2 gig of space, I reclaimed 200 megabytes of space!

If you're worried or want to convert your drive to reap the benefits of HFS+ why not try out www.alsofts.com PlusMaker it's an excellent trouble free solution.

## What is disk defragmentation?

Saving, copy or delete files to disk be they internal or external may leave you experiencing disk fragmentation, files get 'split-up' or fragmented when they are saved in more than one location. I know what you're saying right now 'but I only save my files in one location?' Well you're right it's not you it's your computer that's all part of the fun. Don't think that this is exclusive to Mac's our PC loving friends get the same treatment from their hard drives as the rest of us.

When for example a hard drive tries to read a fragmented file it has to move its reader heads round and find all the locations your file has been saved to to open it, this wastes

time and can corrupt data in extreme cases!

So now you've told me this what can I do?

Well the best thing to do is buy a disk aid/repair utility programme. I recommend from a personal choice the following:

Norton Utilities - The disk optimising feature in NU is simple and effective if a little slow. Norton has long been the leader in the disk aid field but lately its software has become a little buggy with certain hard drives and the HFS+ format.

PlusOptimiser - From Alsoft this utility is both quick and effective. Cheaper as a separate package than Norton Utilities if you have no need for other tools.

MacMedic - Can optimise your drive as effectively as any of the others. There really is nothing to choose from when buying an optimiser. I use Norton Utilities as the package has a wide spread of tools for the discerning Mac user, although MacMedic and PlusOptimiser are both excellent packages. You have to buy what best suits you, after all you are the customer!

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