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Hard Drives: Partition Size and Missing Space Explained (2/95)

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Security: Everyone

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TOPIC-----

I have noticed that Apple hard drives format to a size short of rated capacity.

I examined a 120MB hard drive and found a partition with several megabytes of free space above the Apple's standard 110MB partition. Why is this?

Also, If I compare the partition size shown in HD Setup and the amount of hard disk space displayed in the Finder window , HD Setup shows about 2MB more space. Why is this?

DISCUSSION-----

Apple formats its hard drives of each size to have a standard partition size and leaves a free partition of varying size on the disk. Since Apple uses hard drive mechanisms from different vendors with varying physical sizes, the default format allocates the same amount of space for the Macintosh partition and all excess space becomes part of the free partition.

If, for example, you buy two identical systems, both show the same hard drive size instead of showing one Macintosh with a 79MB hard drive and the other showing 76MB. Apple did this to prevent different hard drive capacities on supposedly identical systems.

If you re-partition your Apple hard drive with HD Setup and you want to use a larger partition size than the standard Macintosh partition, you do not need to save any free space. (Apple does not endorse or support changing the partition size.) You may use the maximum Macintosh partition and the hard drive should operate properly.

WARNING! Re-partitioning a drive results in a complete loss of data.
Do not attempt to re-partition any drive without first doing a complete backup of the data.

To access the unused space on an Apple hard drive, back up your drive completely, and verify that the backup was successful. Launch Apple HD SC Setup, and click Partition. If there's unused space, it will appear as gray space with the size to the left. An Apple 80 MB hard drive formatted with default partitioning has about 2 MB unused. This is done to standardize all 80 MB Apple hard disks.

To use this space, you must be willing to reformat the hard disk, so make sure you backup your drive. Follow these steps:

- 1) Start up using the Disk Tools disk.
- 2) Open Apple HD SC Setup.
- 3) Click Partition.
- 4) Select your main Macintosh volume and remove it (this wipes out all data!).
- 5) Click and drag from just below the driver partition all the way to the bottom.
- 6) Select Macintosh volume in the resulting dialog.

Once you partition and mount your hard drive, different utilities may report different drive sizes. As an example, if you use an 80MB drive formatted with HD SC Setup from Disk Tools 7.1, the default partition is approximately 76.3MB and the maximum size partition is about 80.1MB. When you look at the amount of disk space displayed in the Finder window, you see 75MB and 78.7MB free space available respectively, with about 70K used.

With a disk utility like the Norton Utilities Disk Editor, you can verify that all the hard drive space is accounted for. The directory structure for the hard drive (including the boot blocks, volume info block, extents tree header, extents b-tree, catalog tree header, catalog b-tree, and the Desktop DF and Desktop DB files) occupies about 1.3MB.

The Finder window displays only the disk space available to it (the partition size minus the directory structure) while the disk utility shows the full partition size. This accounts for the 1.3MB difference. Note that the Desktop files grow as the disk is used in order to store information such as the icons used by the new files.

Article Change History:

- 20 Feb 1995 - Combined another article into this one.
- 07 Feb 1995 - Changed distribution; added warning; added keyword.
- 05 Aug 1994 - Reviewed for technical accuracy, revised formatting slightly.

Support Information Services

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