

The SSD (Solid State Drive) Revolution is here

Christopher Barnatt, "Explaining Computers" on You Tube relates the first hard drive was made 50 years ago. With the technology of SSD's improving rapidly he predicts the manufacture of spinning hard drives will cease completely within ten years. Questions?

(P.S. Christopher explains well and has a number of related videos. I recommend his "Explaining Computers" YouTube series for learning)

Solid state drives are replacing slower mechanical (spinning) hard drives. For now HDD (Hard disk drives) are still useful for storing large amounts of data, but the SSD drive for booting your computer is **much faster**. Why? It uses flash memory. No moving parts. Boot time with an SSD is a fraction of the boot time of the HDD. Questions?

One comparison of boot speeds on YouTube is 31 seconds by SSD vs. 1:40:02 minutes by HDD.

So . . .

First, I upgraded a slow laptop by installing an 512GB SSD for \$56 Very simple to do. Remove HDD cover from bottom of laptop, remove HDD, insert SSD. You will need to buy a "docking station" to connect your old HDD to the laptop so you can clone the HDD to the SSD. Insert the HDD into the docking station, connect the station by USB to the laptop, boot up, and you're ready to clone from HDD to SSD. (Demo this) Download Macrium Reflect Free to clone.

Now for the desktop computer.

There are two types of SSDs: one with an SATA connector (common connector) and one with an M.2 connector (new, not on older computers). The latter type is much faster than the former, but you probably do not have an M.2 connector on your motherboard. What you probably DO have is a PCIe connector (long, blue) on the motherboard. An adapter for the PCIe connector that has the M.2 connector on it costs about \$16. (So buy the M.2 SSD and an adapter for fastest speed.)

The cost for a 1TB SSD (\$100) with an adapter to connect it to (\$16) is about \$116 + tax. (Crucial P1 1TB NAND NVMe PCIe M.2 SSD) (The adapter I bought is Mailiya M.2 PCIe adapter.)

Recommended on YouTube: "Explaining PCIe slots". Also: "The Death of the Hard Drive."

So here's what to do next, now that you have the parts.

- After you have installed the SSD in the M.2 connector on the adapter, have opened your computer to expose the motherboard, and have inserted the adapter into the long blue PCIe connector on the motherboard you will need to make the SSD the boot drive. This

is where the speed of an SSD makes the big difference. I'm told the best thing you can do to speed up a slow computer is to have an SSD boot the computer. Your other hard drives are useful for data storage. Questions?

- How to have your SSD boot the computer? Clone your C: drive to the SSD. The SSD must be larger than your boot drive. Easy? You need software to clone the hard drive. Download the free Macrium Reflect Free. Go to YouTube for a demo on how to use it.
- Next, run Macrium Reflect. Tell it to clone. Be SURE you pick the SSD as the destination.
- When cloning is complete, reboot. Press F12 (to BIOS) to select which drive to boot from. Select the Crucial.
- Make sure the SSD boots the computer and all is well.
- If all is well you can adapt the old spinning HD to storage. Format first.

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