Solid State Drive Upgrade
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What is a solid state drive?

- A data storage device that uses integrated circuit assemblies as memory to store data persistently.
- An alternative to mechanical spinning hard disk drives, SSDs employ flash memory chips to store information.
- Many of you are already using solid state drives (flash storage) in your smart phones, tablets, and high end laptops.

Why might you want a solid state drive?

- Dramatically faster performance of all computer operations that depend on accessing the drive.
- Silent operation
- Immune to many environment issues: vibration, altitude, and heat
- Lower power consumption (longer laptop battery life)

Downsides to SSDs

- Cost per GB is higher than hard drives: 1-2 GB/$ for SSDs vs. 7-20 GB/$ for hard disks. (10-20x as expensive per GB)
- Practical maximum sizes in the 500GB range (and at $400)

How to shop for an SSD

- Figure out how big of an SSD you need and can afford, look at how large your program folder is and how much space your frequently used files take up.
- Two types of common flash memory in SSDs, MLC (multi level cell) and SLC (single level cell)
    - SLC is more expensive, faster, and lasts 2-3x as long as MLC
- Tom's Hardware has a regular "Best SSDs for the money" article http://www.tomshardware.com/reviews/Storage,5/Internal-Storage,19/

- If you are upgrading from an existing drive, either purchase a cloning adaptor and software (~$20, I demonstrated an APRICORN ASW-USB-25) along with a bare drive, and possibly a rail adaptor kit: SSDs are the same 2.5" form factor as laptop drives, vs. 3.5" for factor for desktop hard drives. Or purchase the drive packaged as an upgrade kit with cloning gear, and rail kit.
- A good strategy for those with large storage needs is to move less used files to a hard drive, and use the SSD as a boot and applications drive.

How do you install a solid state drive?

- Install the rail kit to the SSD if it will mount in a 3.5" bay
- Follow directions for the cloning kit to copy the hard drive (if needed), or install the OS, then copy files from backup
- After cloning, install the SSD in the computer