SSD - What is it ?

Solid State Drive

Replacing (or in addition) to an HDD

Hard Disk Drive

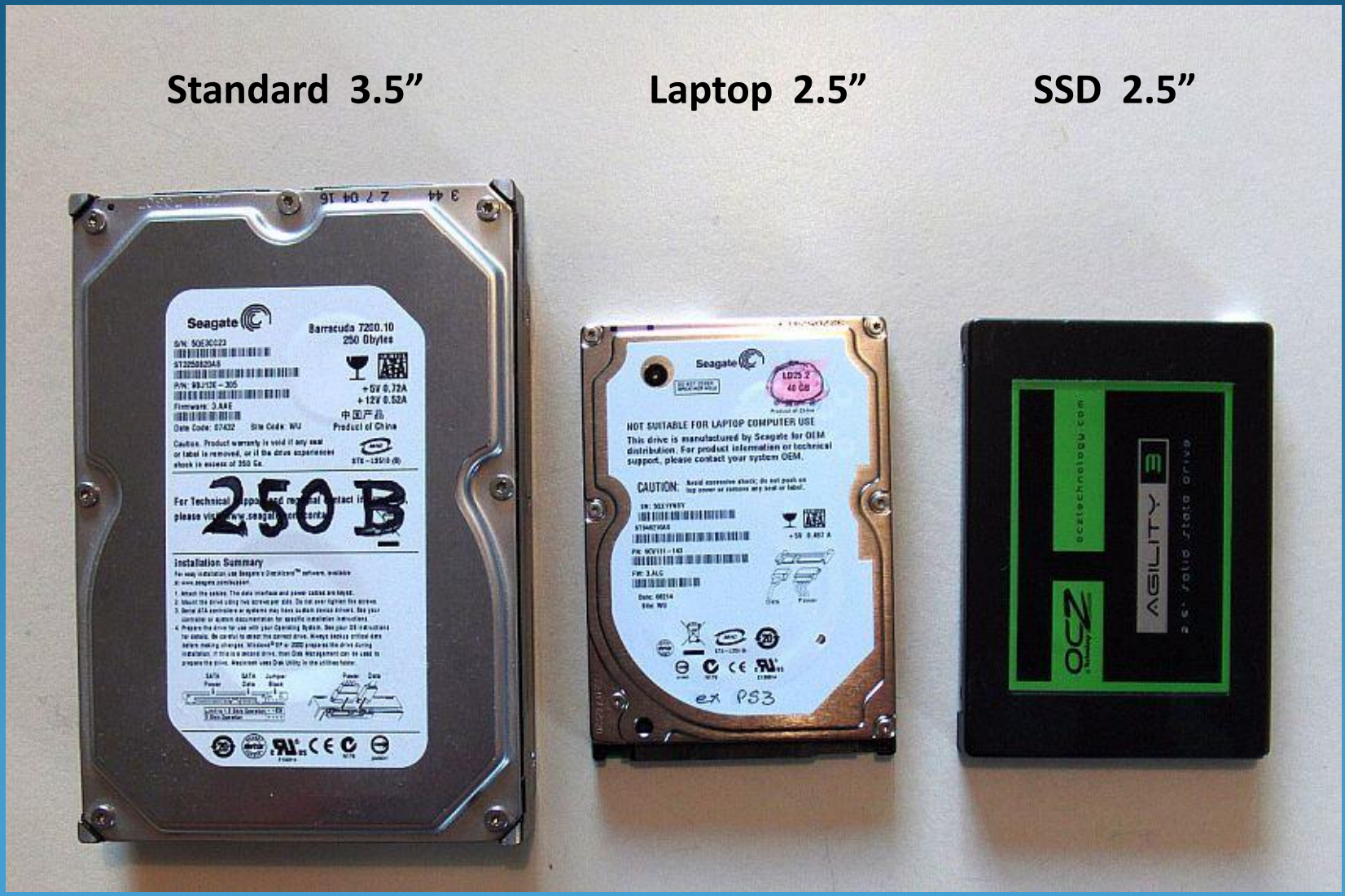
Where a PC stores all our data . . .

Physical Size Comparisons

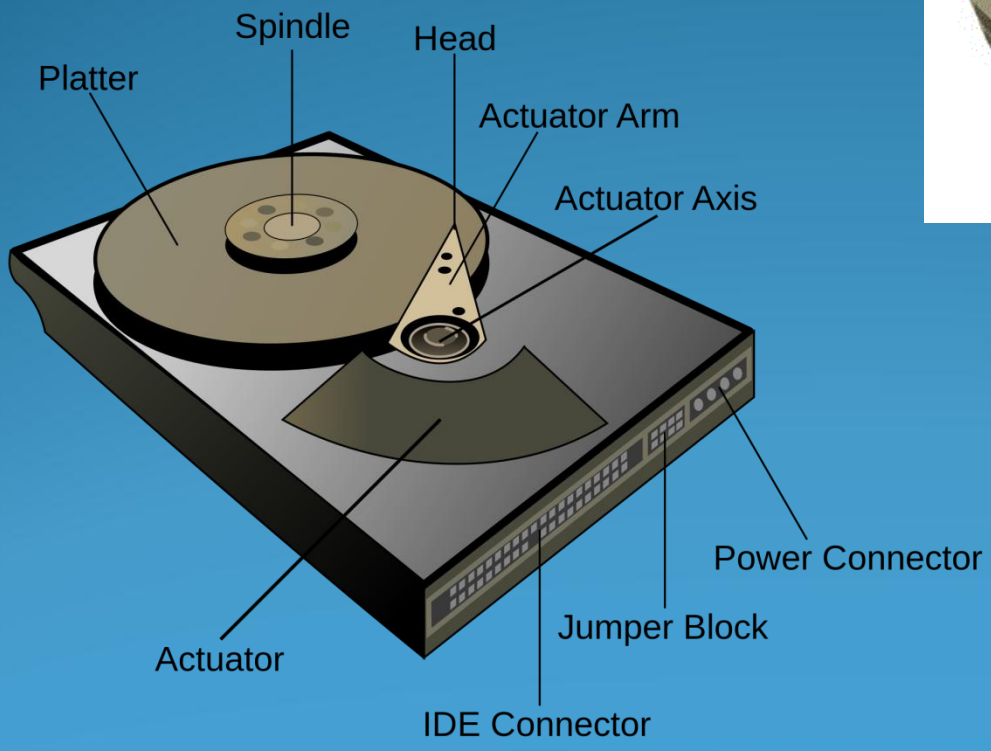
Standard 3.5”

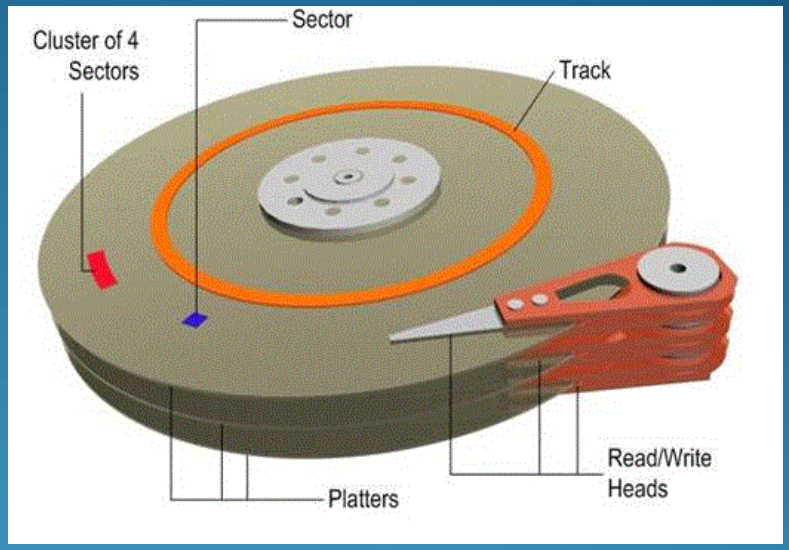
Laptop 2.5”

SSD 2.5”



How does HDD work ?





HDD vs SSD Differences

Hard Disk Drive

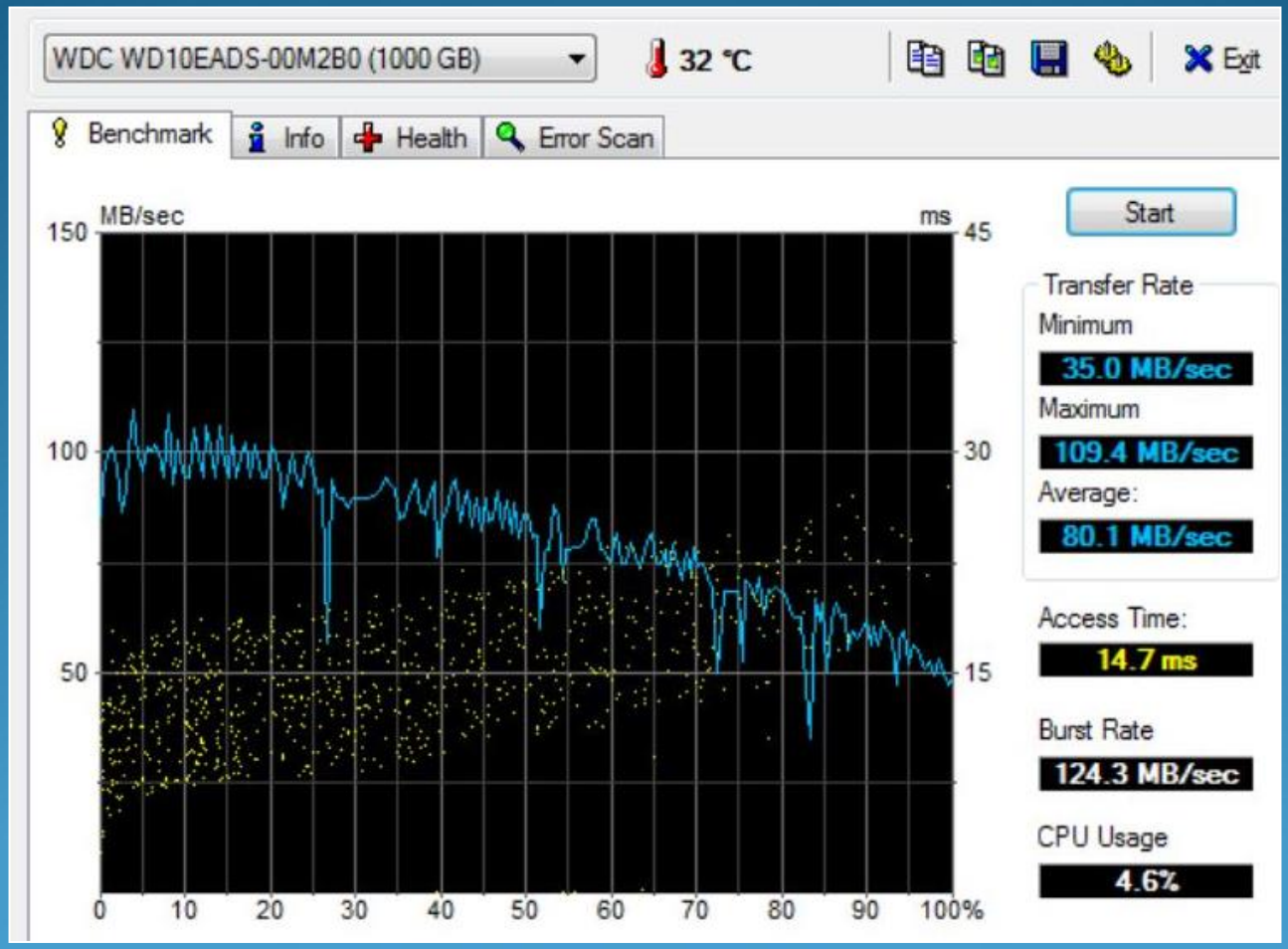
- spins at High Speed (5400rpm, 7200rpm and above)
- info recorded in tracks (like an LP record)
- R/W head on arm moves across spinning surface (like an LP record)
- actually flies above the surface . . . Can move quickly track-to-track
  (positional delay – depends upon distance needed..)
- needs to wait for data to be under the head, so it can be read / written
  (rotational delay – on average, half a revolution
- Needs power -> heat, eventually "wears out" – head crash ! !

Solid State Disk

- like an oversized USB stick, no moving parts, uses far less power
- No positional or rotati0nal delays – thus better performance
- May wear out (read/write process), 10 year life ? ? ?

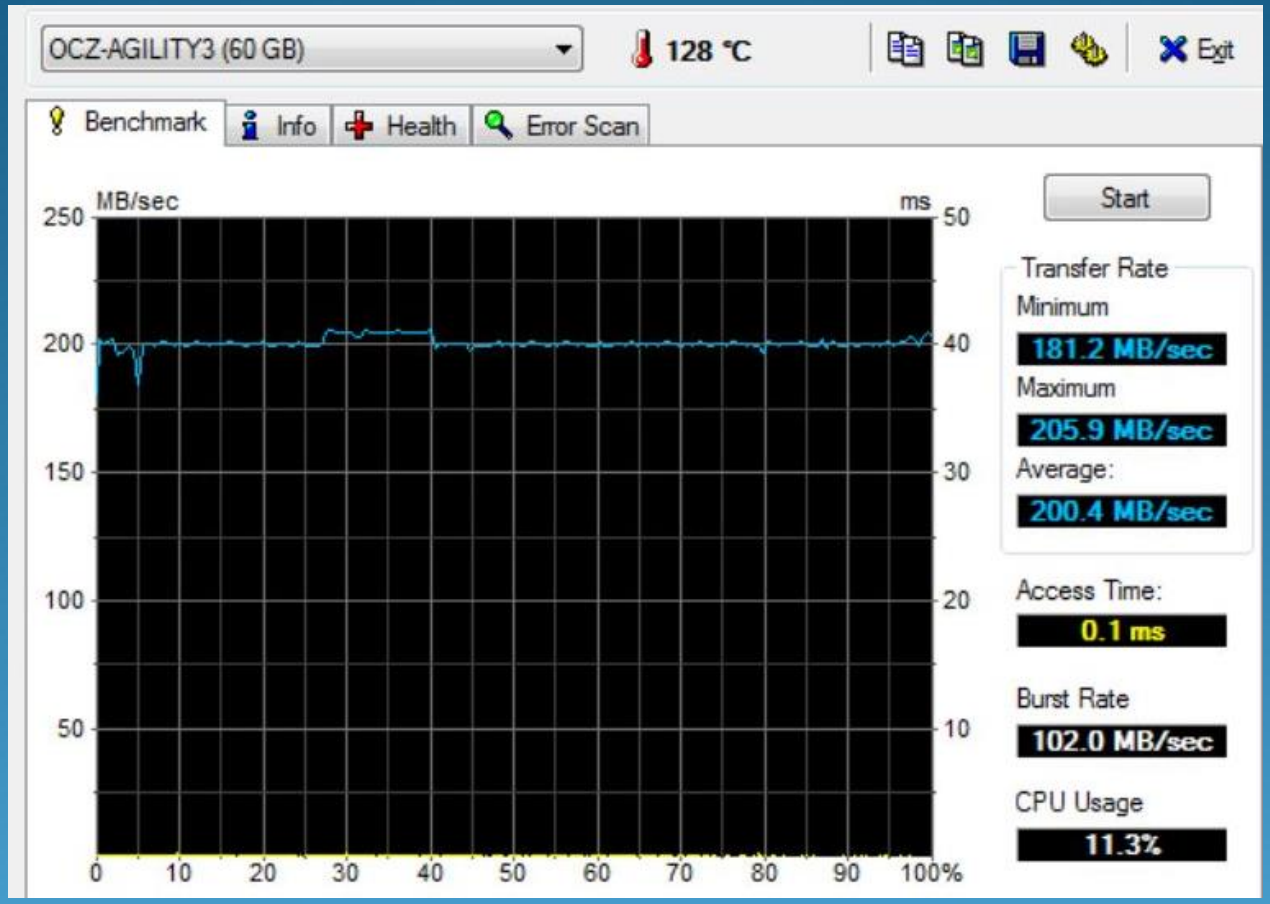
- Cost/GB reducing, now reasonable - 250GB drive, $120
  (compared to $120 buys 2TB 3.5" HDD)
- Either DIY, or maybe $60 Labour in a PC Shop (after SSD Purchase)

Measurement using HD-Tune S/w



Transfer 100->50 MB/sec, Access 14.7 ms

Comparison for SSD

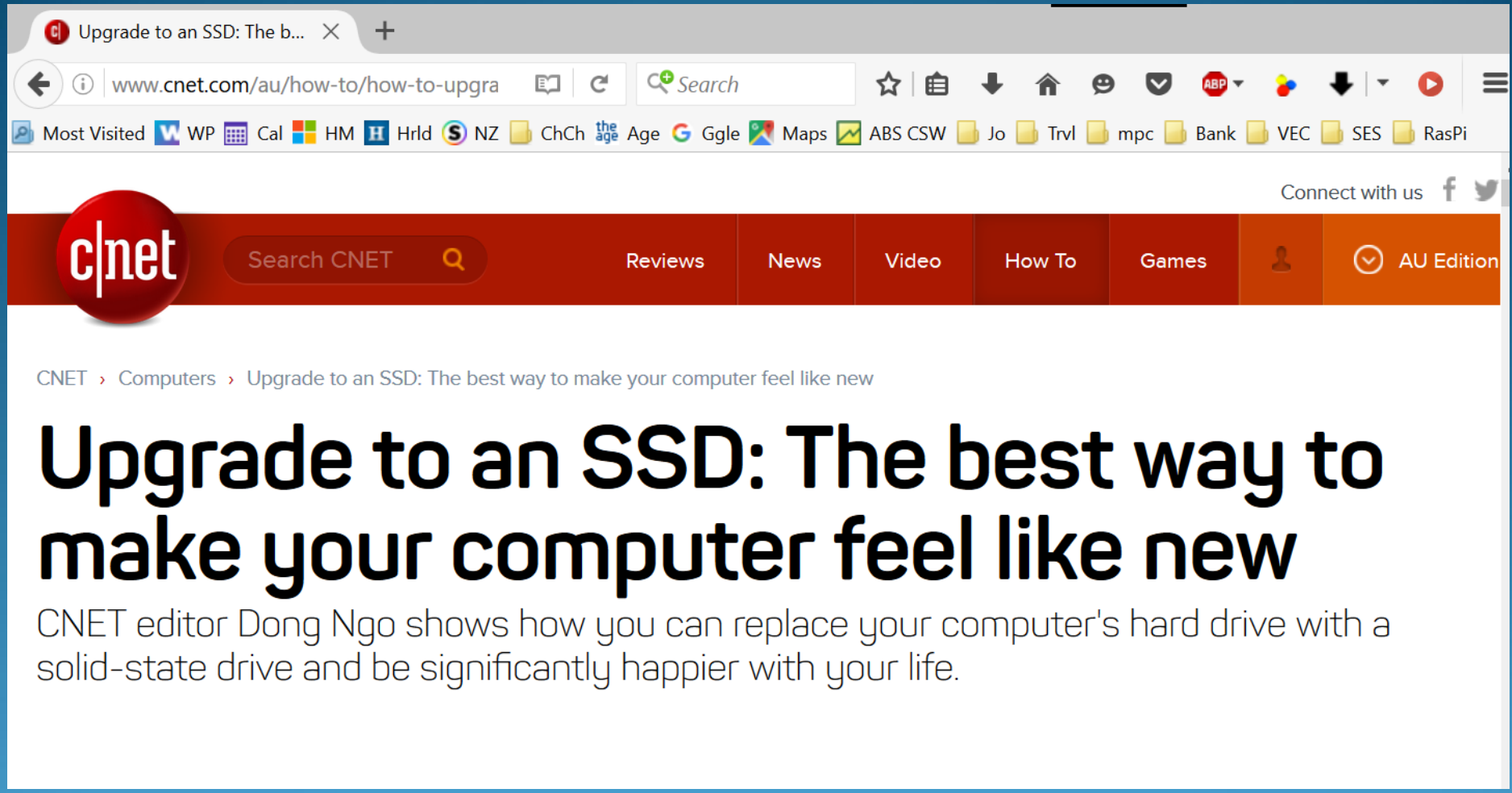


HDD - Transfer 100->50 MB/s, Access 14.7 ms,

SSD - Transfer 200 MB/s flat, Access 0.1 ms

Device Performance Comparison

Device	Size	Av Xfer MB/sec	Access Time millisecs
USB-Flash	8 G	19	0.6
USB-External HD	2 T	33	15.7
Laptop 2.5” HD	160 G	35	17.5
PC 3.5” Sata HD	1 T	80	14.6
PC 3.5” eSata HD	1 T	87	15.3
SSD external eSata	60 G	110	0.1
SSD Internal Sata	60 G	200	0.1
RAM-Drive	750 M	2,110	0



http://www.cnet.com/au/how-to/how-to-upgrade-ssd-windows-10/

Installation Process

- Attach SSD to existing PC
  - for laptop, may need a USB external dock
- Clone HDD to SSD (if about same size)
  - else Recover OS Partition to SSD
- Swap SSD for HDD (or change Boot Sequence)
  - may need to update MBR, using Win DVD Repair
- Enjoy far better performance . .