ORGANIZATION AND ARCHITECTURE



ARROTAMA HAFEDMAWAN L200164015

**Comparison SSD (Solid State Drive) and HDD (Hard Disk Drive)**

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| **Attribute** | **SSD (Solid State Drive)** | **HDD (Hard Disk Drive)** |
| Power Draw / Battery Life | Less power draw, averages 2 – 3 watts, resulting in 30+ minute battery boost | More power draw, averages 6 – 7 watts and therefore uses more battery |
| Cost | Expensive, roughly $0.20 per gigabyte (based on buying a 1TB drive) | Only around $0.03 per gigabyte, very cheap (buying a 4TB model) |
| Capasity | Typically not larger than 1TB for notebook size drives; 4TB max for desktops | Typically around 500GB and 2TB maximum for notebook size drives; 10TB max for desktops |
| Operating System Boot Time | Around 10-13 seconds average bootup time | Around 30-40 seconds average bootup time |
| Noise | There are no moving parts and as such no sound | Audible clicks and spinning can be heard |
| Vibration | No vibration as there are no moving parts | The spinning of the platters can sometimes result in vibration |
| Head Produced | Lower power draw and no moving parts so little heat is produced | HDD doesn’t produce much heat, but it will have a measurable amount more heat than an SSD due to moving parts and higher power draw |
| Failure Rate | Mean time between failure rate of 2.0 million hours | Mean time between failure rate of 1.5 million hours |
| File Copy / Write Speed | Generally above 200 MB/s and up to 550 MB/s for cutting edge drives | The range can be anywhere from 50 – 120MB / s |
| Encryption | Full Disk Encryption (FDE) Supported on some models | Full Disk Encryption (FDE) Supported on some models |
| File Opening Speed | Up to 30% faster than HDD | Slower than SSD |
| Magnetims Affected | An SSD is safe from any effects of magnetism | Magnets can erase data |