

# Hardware Upgrades: RAM and SSD

## Memory Upgrades

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### RAM: Random Access Memory

- Upgrading your RAM is the easiest way to get your computer running quicker and smoother. Your computer should have at least 8GB RAM to perform well with modern operating systems and programs.
- **Mac Upgrades:**
  - The RAM on most newer Macs cannot be upgraded. Below is a list of Macs which **cannot** be upgraded:
    - Mac mini (2014, 2020 and newer)
    - MacBook Pro (Late 2012 and newer)
    - MacBook Air (all models)
    - MacBook 12" (all models)
    - iMac (some 21" models 2015-2020, all models 2021 and newer)
  - To check whether your Mac can be upgraded, enter your serial number into [Everymac.com's serial lookup tool](https://everymac.com).
  - [How to upgrade your Mac's RAM](#)
  - [How to determine how much RAM you need](#): check your Activity Monitor for Memory Used to determine how much RAM you need.
- **PC Upgrades:**
  - [How to Install RAM on your PC](#)

- How to determine how much RAM you need: check your memory usage and determine how much RAM you'll need.
- Newegg Memory Configurator - Choose the right RAM for your computer

# SSD Upgrades

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- A Solid-state-drive (SSD) is a storage device for your computer. It is much faster than a hard disk drive (HDD), which was traditionally used for storage in computers. It has no moving parts and its information is stored in microchips.
- Upgrading your computer from a HDD to a SSD will greatly increase the speed. More specifically, loading times and transfer times will speed up. (Copying and moving files).
- Crucial SSD Upgrade Tool - helps determine which upgrade you need.
- **Mac Upgrades:**
  - The storage drive on most newer Macs cannot be upgraded. Below is a list of Macs which **cannot** be upgraded:
    - Mac mini (2018 and newer)
    - MacBook Pro (2016 and newer)
    - MacBook Air (2018 and newer)
    - MacBook 12" (all models)
    - iMac (2021 and newer)
  - To check whether your Mac can be upgraded, enter your serial number into Everymac.com's serial lookup tool.
  - Determine which SSD is compatible with your system with the Crucial link above or here. Find your Mac model and check out the buying options for SSD upgrades.
  - To learn about SSD Upgrades for Macs click here.
- **PC Upgrades:**
  - To determine what kind of drive your computer has click here.
  - Use the Crucial link above for buying options.