Build Your Own Desktop PC – Part 1

**Basic Computer Components**



**Computer Case** – Houses all the computer components to form the tower

* Various sizes – typical size is a mid or full tower
* Price Range: $20 - $350



**CPU/APU** - The main chip that processes programs and apps

* **CPU** - Central Processing Unit
* **APU** – Accelerated Processing Unit (includes graphics)
* Use [www.passmark.com](http://www.passmark.com) to determine a component’s score

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Light User** | **Moderate User** | **Power User** |
| Passmark Score | APU: 3000+ | APU/CPU: 5000+ | APU/CPU: 8000+ |
| Price Range | $55-$100 | $110-$180 | $200-$1000 |



**Motherboard** - The mainboard that connects all your components

* Match your motherboard to your CPU (brand, socket, case)
* Consider features (Ram support, Sata slots, Video support, ports, etc.)
* Price Range: $35-$$350

**GPU** (Graphics Processing Unit) – Allows images to be displayed on the screen



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| --- | --- | --- | --- |
|  | **Light User** | **Moderate User** | **Power User** |
| Passmark Score | APU can handle graphics | GPU: 4000+ | GPU: 7000+ |
| Price Range | $0 | $120-$200 | $250-$1000 |



**RAM** (Random Access Memory) – Runs all of your programs and apps

* Size: Minimum – 4GB, Recommended – 8GB+
* Must be compatible with your motherboard
* DDR4 is the new standard, making it faster and more expensive
* Price Range: $5-$10 per GB



**Hard Drive** - Saves your files, programs, and apps to the computer

* **SSD drives –** Quickest
* **Hybrid drives –** Quick with high storage
* **Mechanical hard drive –** Most common, slowest w/ highest storage

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| --- | --- | --- |
|  | **Low Storage User (SSD)** | **High Storage User** |
| Capacity | 120GB-240 GB | 500GB-2TB |
| Price Range | $45-$120 | $40-$150 |



**Optical Drive** – For reading discs (CD, DVD, Blu-Ray)

* If you will not load media or watch videos from discs, an optical drive is not necessary
* Price Range: $20 - $200



**Cooling Fans** - Keeps the parts cool to prevent overheating/damage

* 1 fan is typical for light user; 2+ for moderate & power users
* Quieter fans begin in the 17dB level and lower
* Common sizes: 120mm or 92mm
* Price Range: $6-$40



**PSU** (Power Supply Unit) – Powers all of your components

* Use a PSU calculator to determine wattage needs
  + <http://outervision.com/power-supply-calculator>
* Verify your 12-volt rail has enough Amps for your graphics card
* Price Range: $40-$200

**Operating Systems**

**Windows**

* Windows 10 is the current version
* Beware of when security updates will end for older versions (ex: Windows 7 ends in 2020)

**Linux**

* Free alternative to Windows but geared towards tech-savy crowd
* Umbuntu, Mint, Lumbuntu are the popular versions

**Trusted Brands**

**Less Reliable Brands**

|  |  |  |
| --- | --- | --- |
| ASUS | Adata | Patriot |
| Gigabyte | Western Digital | ECS Elite Group |
| MSI | EVGA | Biostar |
| Kingston | XFX | Logisys |
| Corsair | Zotac | Super Talent |

Consider purchasing components in person at Fry’s Electronics, Micro Center or online through Newegg or Amazon