Instructions for using CPU-Z, read the CPU-Z parameters provided

CPU-Z only works in Windows operating system to collect information about some of the main hardware components of the computer.

Network administration - If knowledge is power, CPUID's CPU-Z program will make you feel like a superhero. This tiny tool has been listed as one of the best free software to check computer information. CPU-Z only works in Windows operating system to collect information about some of the main hardware components of the computer.

The information is very detailed and focuses on your CPU, motherboard, memory and general Windows and DirectX system information.

Throughout this article, we will introduce you to this utility and equip its remarkable power for your own computer.

To get started, download the latest version of CPU-Z to your computer. Then, double-click the downloaded .exe file to install CPU-Z on the computer. The installation process is fast, with no problems or extra components attached. (If you do not want to install the software, you can download the CPU-Z protable in the form of .zip, extract and run the .exe file.) A software shortcut will be created on the desktop, double-click it to open the CPU-Z interface.

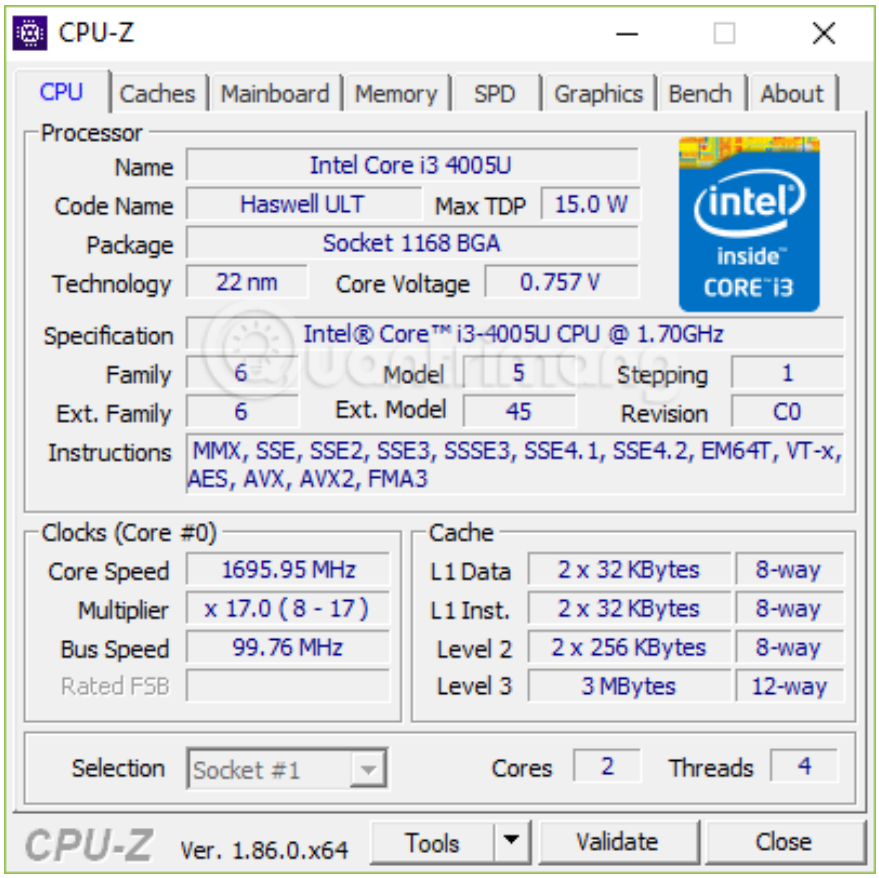
The window is presented as tabs to classify information by categories. Tabs are labeled CPU, Caches, Mainboard, Memory, SPD, Graphics, Bench and About. You can see these labels in the picture below.

Select a certain tab, then there will be a series of information in that tab, including information that you never knew. Should not be dispersed by too much data, you should focus on what you want to see. Below we will learn more details about these tabs.

Note: The article is based on version 1.86.0, 64bit version. CPUID always updates its software to add new features and support for new CPUs and chips. So if you see a different interface than the photo, notice if the version is the same version you used to illustrate it.

CPU tab of CPU-Z

The CPU tab will tell you information about your computer's CPU, such as name, multiplier, number of threads, socket number, power consumption, technology, pulse rate, etc. Specifically:



Name: CPU name, in the screenshot of your computer is Intel Core i3 4005U.

Code Name: Code name of the CPU architecture.

Max TDP: Maximum CPU power consumption.

Package: The socket type of the CPU, for each different socket type, will have a different number of pins. This parameter is very important when you want to upgrade the CPU, you cannot bring 1 CPU socket 478 chip attached to socket 1155 and vice versa. TipsMake.com has an article about a fairly detailed list of CPU sockets, you can read more.

Technology: Technology of transistors. As in my example, 22nm, this number is as small as possible, because it helps the chip to contain more transistors, running faster and more efficiently. This technology is increasingly improving, at the latest CPUs it has been able to reach 14nm (Intel's Coffee Lake series). On the phone Apple has started producing 7nm A12 processors for its devices.

Core Voltage: Voltage for the core of the chip, this parameter is usually not fixed because modern chips often adjust the consumption voltage to save electricity.

Specification: Full CPU name of the computer.

Family: The main architecture of the chip. For example, on Intel's CPU with Family 6, the P6 generation (Pentium Pro, Pentium II, Pentium III and Pentium M - all have the same execution unit). You can refer to Wikipedia for a list of Intel microprocessor chips.

Model: The type of CPU in the family that the computer has. Example with Family 15 (NetBrust generation), model 0 is Willamette core, model 1 is Willamette core has been improved. Model 2 is Northwood built on newer technology. The Model 3 is the Prescott core with 90nm technology, the Model 4 is still Prescott but has additional improvements such as No-eXecute support. This model number is basically a way to identify the CPU core type. You can look up your model in the link of the Family section above for more information about your CPU.

Stepping: This is the number that determines what kind of improvements have been made to the core, and how much new is. It can be understood that like software patches, the larger this number means that it has been fixed many times, improved from previous versions.

Revision: Combination Family, Model and Stepping can tell you the name Revision (must check in the datasheet provided by Intel). Thanks to Revision, you can find improvements made between chips with Family and Model but with different Stepping. And with the CPU Revision, CPU-Z, you can easily know the name Revision without looking for the datasheet. In this article example of my Revision is C0.

Instructions: This is the list of scripts that the chip processes.

Core Speed: CPU clock, this parameter with core voltage frequently changes to save power.

Multiplier: The coefficient of impulse (also known as bus ratio) sets the ratio of the internal clock rate to the external pulse provided. For example, this number is x10, then you will see 10 internal cycles for each external clock cycle.

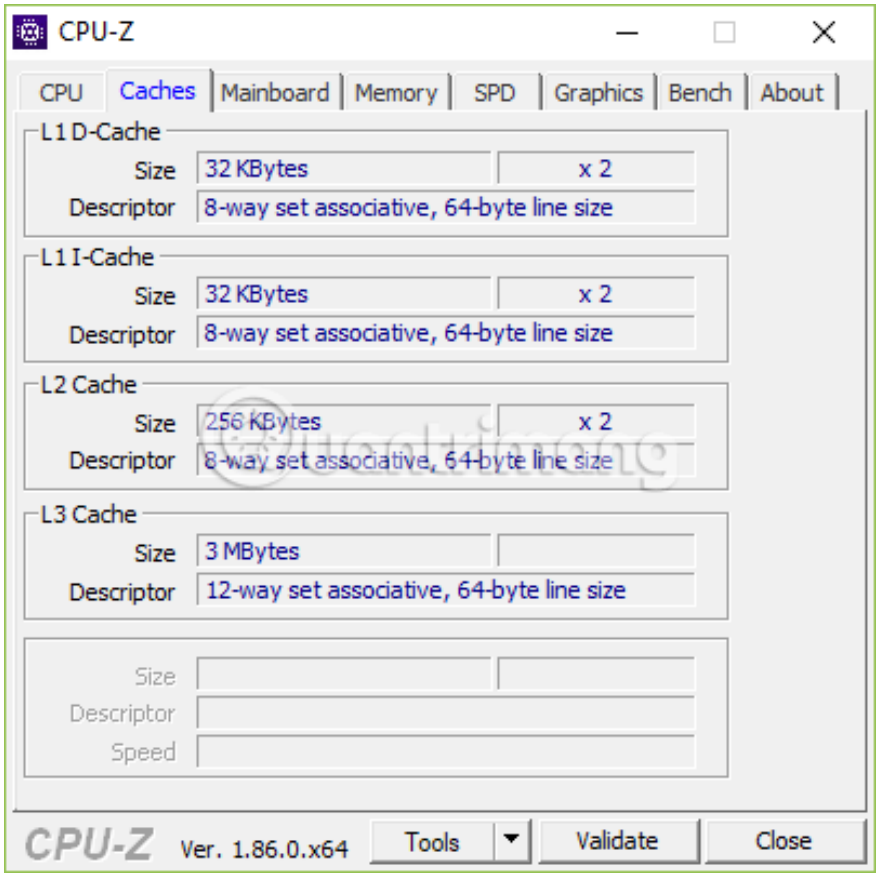
Bus Speed: Bus speed.

Level 3: The cache specification, the higher the better, because the CPU will be less congested when processing. The higher the level, the faster the CPU runs.

Cores and **Threads:** Number of cores (or cores) and number of CPU threads. This number is usually an even number, as in my photos, there are 2 cores, 4 threads.

CPU-Z's Caches tab

The Caches tab tells you more about cache details. Early CPUs had only one cache level and that level should not be divided into L1 D-Cache (for data) and L1 I-Cache (for instructions). Most modern CPUs have L1 Cache divided. All modern CPUs have multiple cache levels and most have L2 Cache, and more recently, L3 Cache. L2 usually does not divide and acts as a common repository for L1. Each multi-core chip has a dedicated L2 Cache and is usually not shared between cores. L3 Cache is a higher-level cache, shared between cores and not divided. There has been L4 Cache, but this cache is not popular on CPU, it appears more on DRAM.

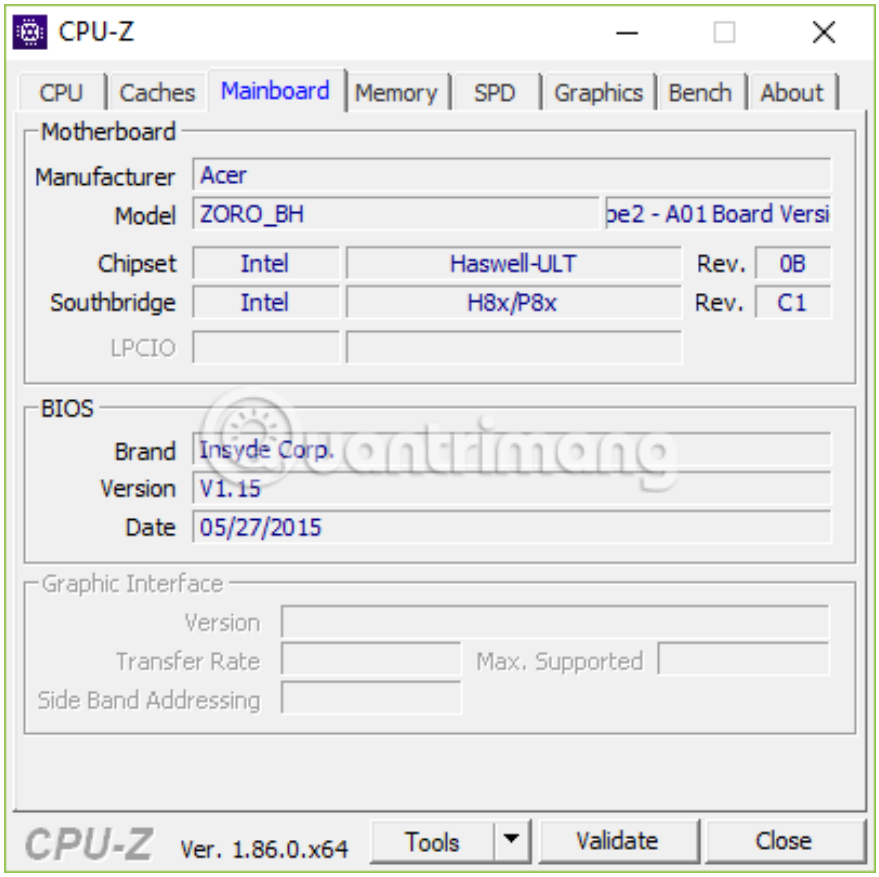


With the Caches tab of CPU-Z you will know the size of each specific cache as well as their specific description.

Mainboard tab of CPU-Z

In the Mainboard tab, you will see a lot of useful information when upgrading or replacing components. This information will include the motherboard manufacturer, chipset, BIOS and graphical interface. From the screenshot below, we can see that our computers are testing for nForce4 motherboards and support for x16 PCI-Express.

That means that the video card in this test computer is PCI-E and not AGP. This is an important information to know if we want to upgrade the video card. However, for example, CPU-Z cannot detect the motherboard manufacturer of the test computer. This rarely occurs and we only have problems with this board.

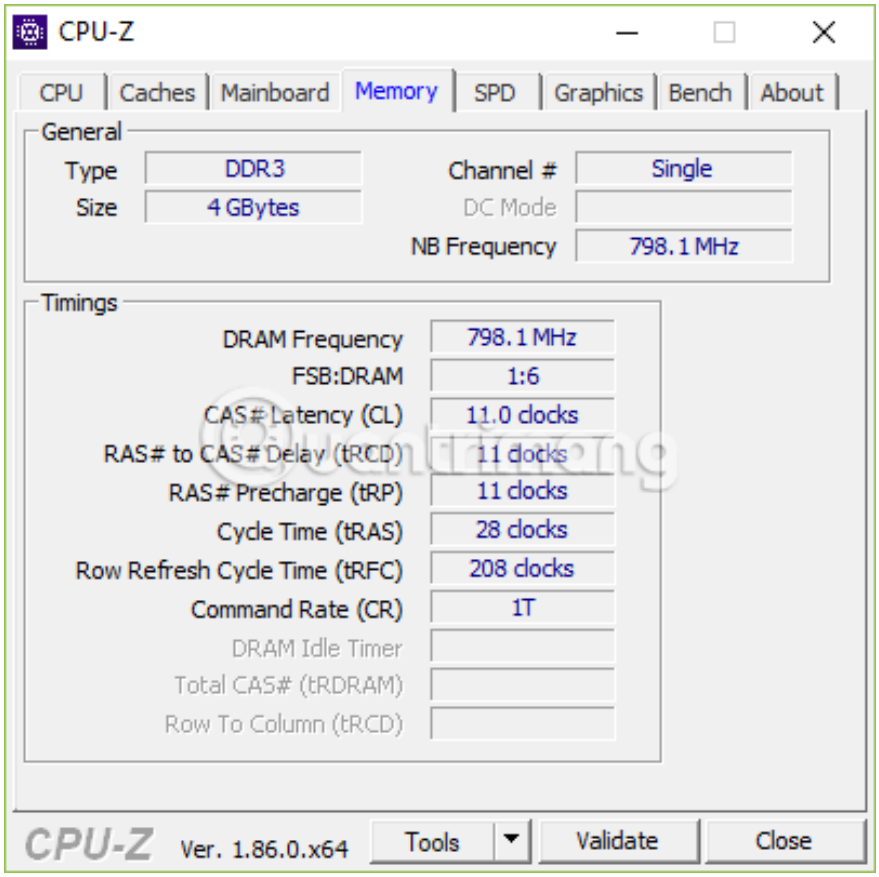


Specifically in this tab you will have:

1. **Manufacturer: The** name of the motherboard manufacturer, for example Acer, Asus, Foxconn, .
2. **Model:** Model of the motherboard, next to the version name.
3. **Chipset:** Manufacturer, chip type and Revision.
4. **Southbridge:** Manufacturer of southbridge and Revision.
5. **BIOS:** Displays information about the brand, version and BIOS production date.
6. **Graphic Interface:** Information about graphics card slots on the mainboard. Version is a supported version, usually only PCI-Express and AGP. Link Width is the width of the bandwidth. However, not all motherboards support this slot.

Memory tab of CPU-Z

Memory tab is also a very useful tab because most people often improve their computer speed by adding more RAM. In the image above, you can see that our test computer has 2GB of internal memory (2048 MB). This memory is DDR memory (different from DDR2 or DDR3) and is running in dual channel mode. Most other information in this tab is for advanced users. You will find more useful information for overclocking.

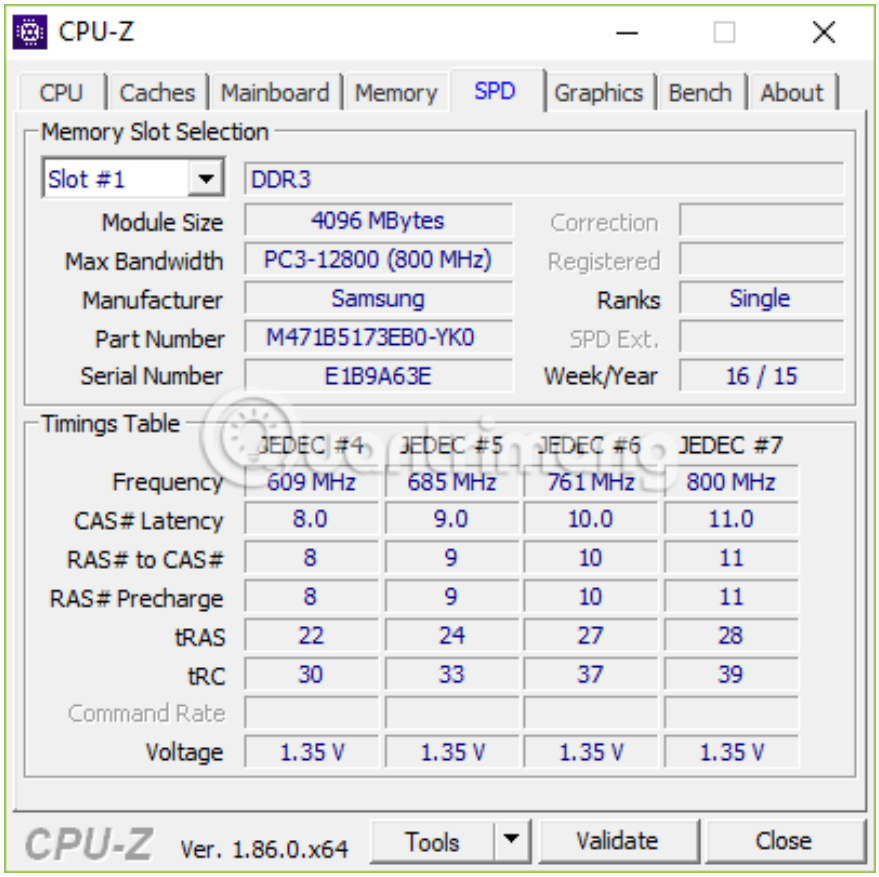


1. **Type: The** type of RAM of a computer, here is DDR3.
2. **Size:** RAM capacity, here is 4GB
3. **Chanel #:** Indicates that you are using some RAM slots, Single is 1, Dual is 2. The Single parameter is also available when there is only 1 RAM slot. You can check the number of RAM slots of the PC in the SPD tab as shown below.
4. **DRAM Frequency:** True bus speed of RAM
5. **NB Frequency:** The speed of the North Bridge.

When there is an empty RAM slot and you want to upgrade RAM, you have to pay attention to the parameters of RAM and speed of RAM to choose the right one

SPD tab of CPU-Z

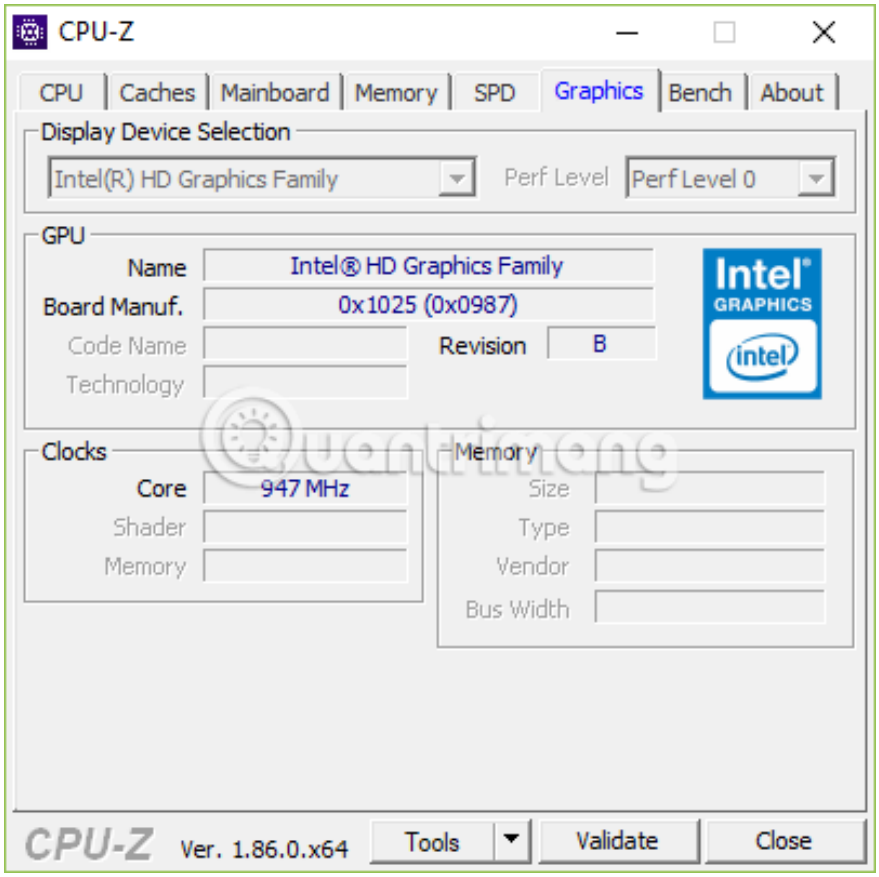
To complete the memory upgrade, you may need to consider some other information. The SPD tab is the tab that contains the information you need to see more. In this tab, you will see information about each memory stick in each slot on the motherboard. You can see the size of the chip, the type of RAM and the frequency it operates. In addition, there is a timeline that displays detailed information based on the configuration.



1. **Slot # 1:** Click the arrow next to Slot # 1, how many slots are there for more RAM slots. Normally the computer will have 2 or 4 RAM slots equivalent to the Slot # maximum of 2 or 4.
2. **DDR3:** RAM type
3. **Module Size:** The capacity of the RAM plugged in the viewing slot, in MB units, 4096MB equivalent to 4GB.
4. **Max Bandwidth:** Maximum bandwidth speed. Thanks to this parameter you can calculate the Bus RAM, by taking the clock pulse in parentheses multiplied by 2. In your shot is 800Mhz x 2 = 1600Mhz.
5. **Manufacturer:** Name of the RAM manufacturer.
6. Other sections in this tab, you can find more on Google, with normal users I think stop here.

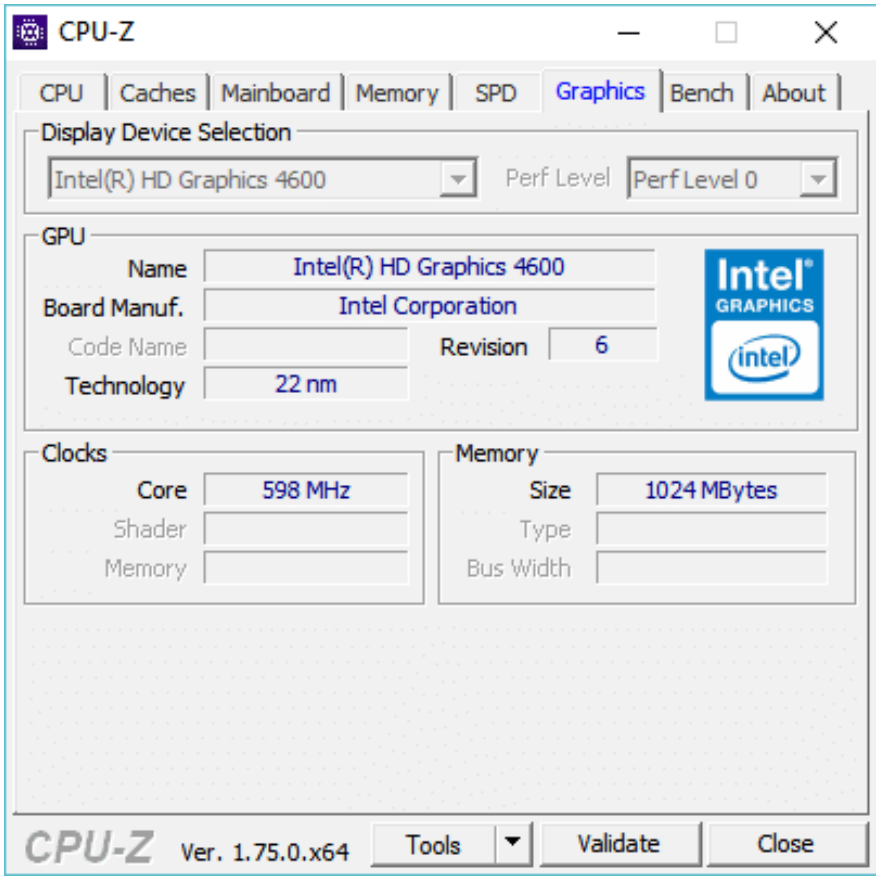
CPU-Z Graphics tab

The graphics tab provides the most basic information about GPU like name, manufacturer, and GPU technology. If you want to take a closer look at the graphics card, you can use a dedicated tool called GPU-Z.



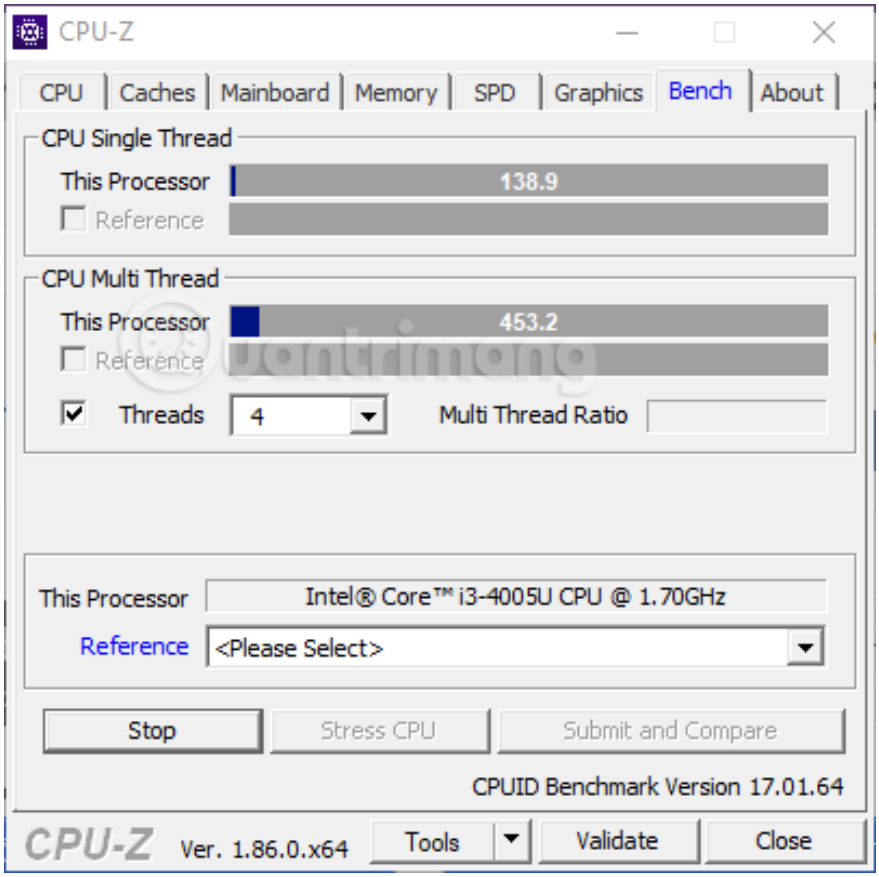
1. **Display Device Selection:** This part is blurred because my device has only one video card. If the computer has multiple video cards, this section will light up and you can select the card to watch.
2. **Name: The** name of the graphics chip manufacturer.
3. **Code name:** The code name of the graphics chip running on the machine.
4. **Core:** GPU clock speed.
5. **Size:** Capacity of the graphics card.
6. **Technology:** Technology of graphics cards, like CPU chip technology, the smaller the better.
7. **Type:** Processing type, for example: 64bit, 128bit, 256bit. The higher this parameter, the higher your card and the better graphics processing.

Here's another picture of the Graphics tab of CPU-Z.

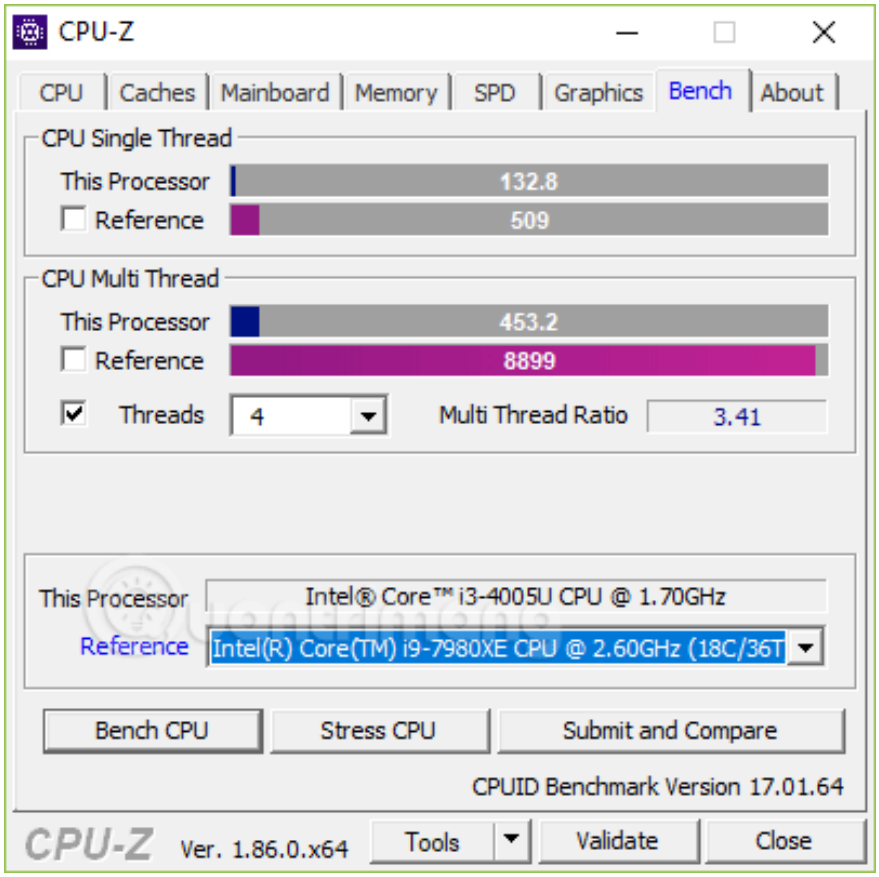


Bench tab of CPU-Z

This tab will tell you the benchmark of the CPU running on your computer by running a small test. After running, you can compare your CPU with other CPUs, by selecting in the blue Reference box. Checking the box next to Reference in black will convert the result to% for you to easily compare.



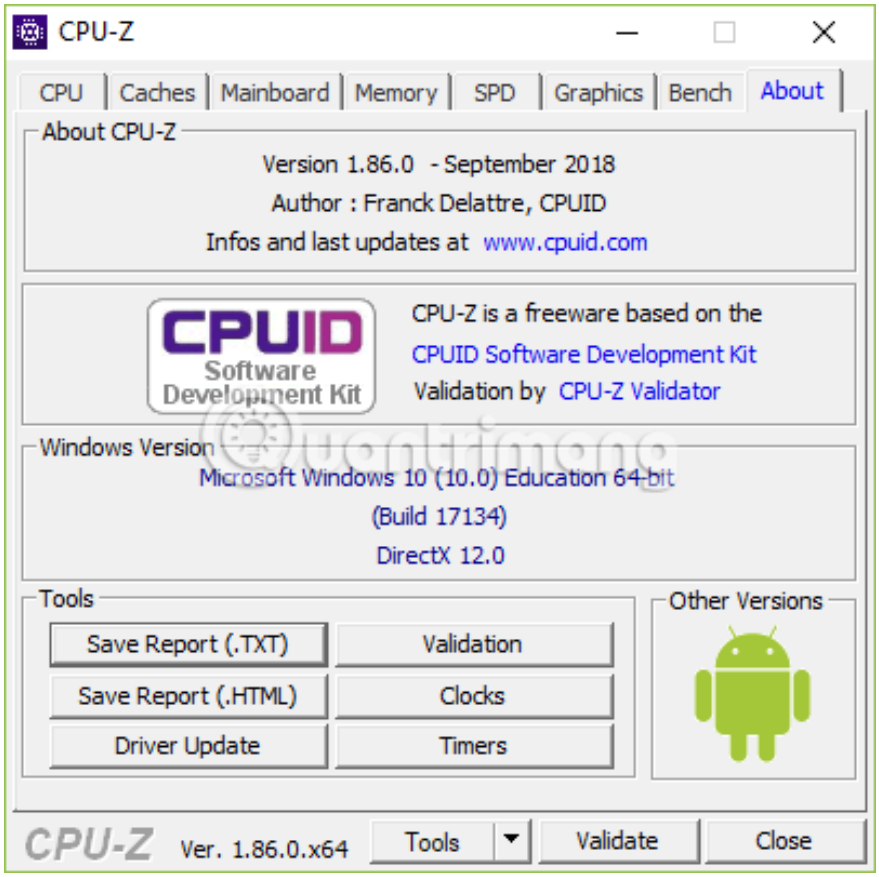
Results when after running the test



Compare CPU on machine with other CPU

CPU-Z About tab

Last but not small, that's the About tab. This tab will give you detailed information about the software and some detailed information about the system. For example, you can see the Windows version, the installed service pack and the DirectX version. From this tab, you can export the data into an HTML file.



This application should be in anyone's computer toolbox. The data it provides is invaluable and the ease of use makes CPU-Z simple for any user at any level.

See also: Decoding specifications on laptop

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