

Replacing/Installing an Intel CPU

Parts List-

- Small Phillips head screwdriver
- Antistatic wrist band or grounded metal object (like an empty computer case)
- Thermal paste
- Isopropyl alcohol (if you are replacing the CPU)
- Paper towel (if you are replacing the CPU)
- CPU
- Existing computer or new motherboard
- CPU cooling fan
- Ziploc bag

CPU Description-

The CPU or central processing unit is the brain of every computer. It is where all of the instructions that control the computer are executed. Each CPU is made of several components such as an ALU (arithmetic logic unit), registers (small but fast memory), and the control unit (responsible for fetching and reading instructions). The CPU performs thousands of arithmetic and logical operations a second in binary.

The CPU is able to be so small and fast because it is made of integrated circuits. An integrated circuit is made up of millions of electrical circuits that have been etched onto a single piece of silicon. This allows for CPUs to be extremely powerful, but also very hot as there are so many electronic circuits operating in such a small place. Thus all CPUs have their own dedicated cooling fan (or several) in order to mitigate the immense heat they produce.

Set of instructions-

1. Bring your tools and computer parts to a flat, open area.
2. Put on your antistatic wristband or touch a grounded metal object.

DANGER/CAUTION: Don't forget to ground yourself and unplug the computer or you run the risk of an electric shock which could hurt you and/or ruin your computer.

The first few steps will be for removing an old CPU. If you are installing a new CPU into a new motherboard skip to step 8.

3. Turn off your computer and unplug it. Then wait about a minute for any residual charge to dissipate.

4. If your computer has an aftermarket cooling fan you will most likely need to access to the front and back of your computer's motherboard. To be sure check your fan's directions. If you have a stock cooling fan you will only need access to the front.

5. Remove the cooling fan either by unscrewing it from the back of the motherboard according to the manufacturer's instructions if it is not a stock cooler. If it is a stock Intel cooler simply release the 4 pushpins (one at each corner), unplug the fan from the motherboard, and gently lift upward. Figure 1 shows the Intel cooler in place and Figure 2 shows the exposed CPU.

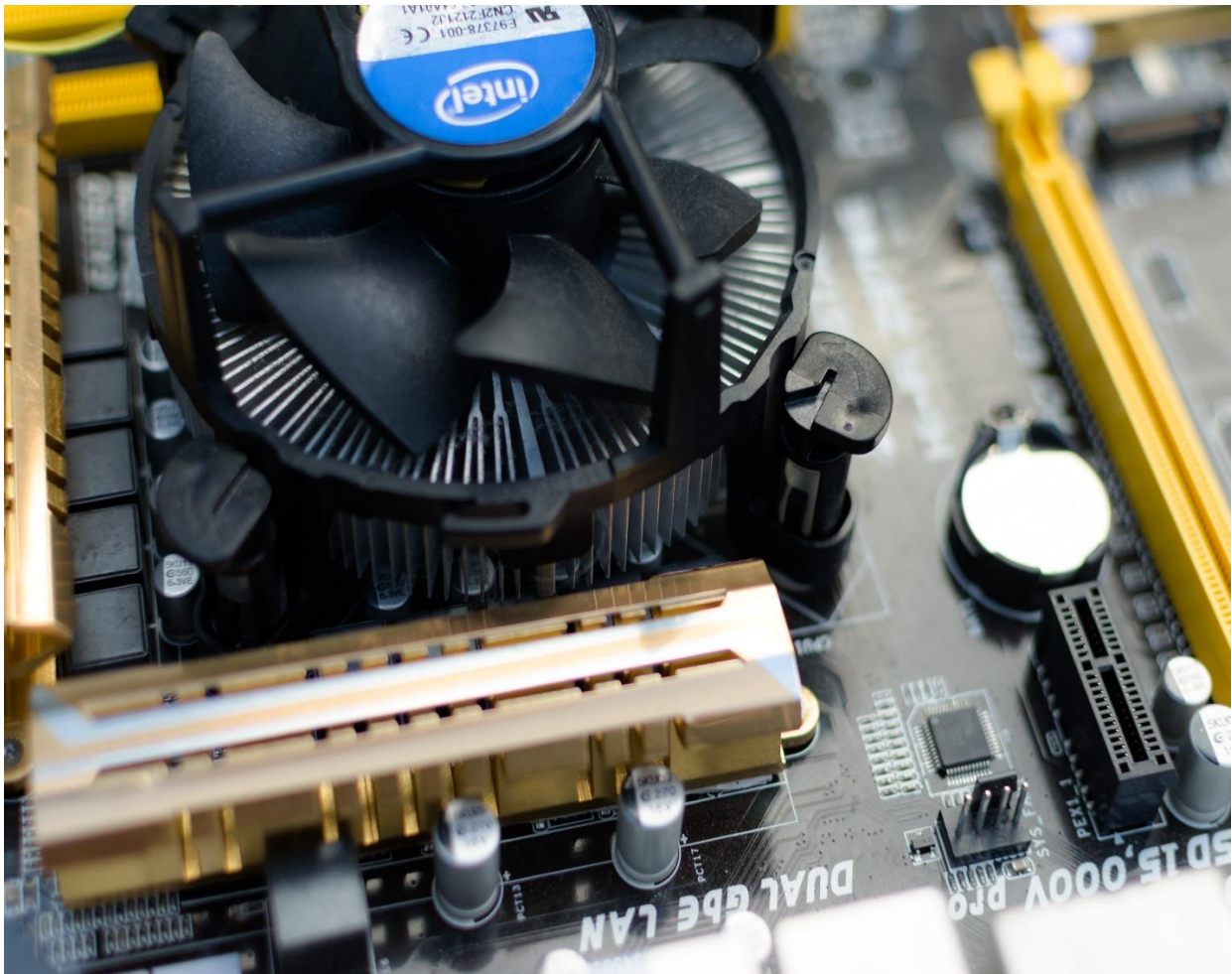


Figure 1

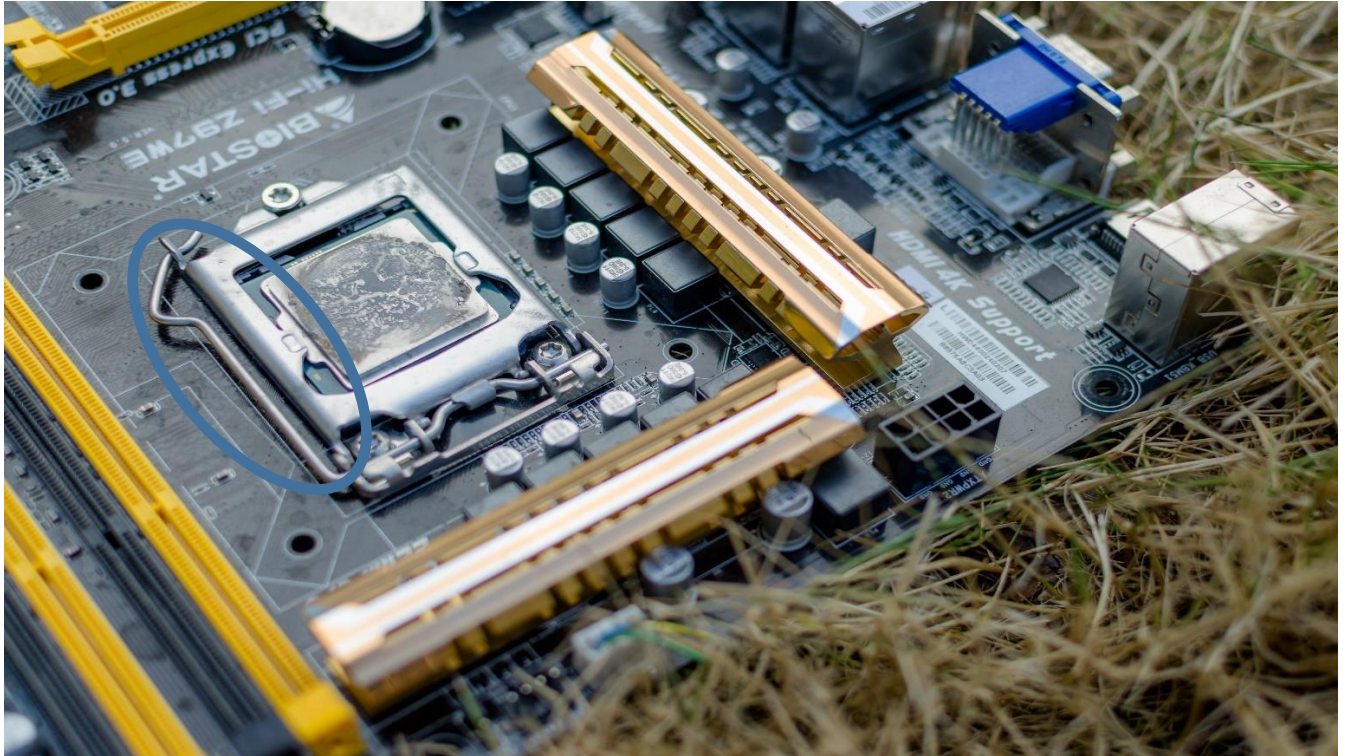


Figure 2

6. Next unhook the lever running alongside of the CPU (circled in Figure 2). Then you will be able to lift the casing that is holding the CPU in place. Lastly, gently lift the CPU by gripping its edges and pulling straight up.

7. *(This step can be skipped if you are not planning to reuse the old CPU or heatsink.)* Slightly moisten a paper towel with isopropyl alcohol and gently rub the contact point of the heat sink until the thermal paste wipes away. Repeat the process for the top of the CPU.

CAUTION: Don't use any chemical cleaners on the CPU or heatsink or you could ruin their conductivity.

8. When looking at the CPU socket you will see two notches near the top edge. (indicated by the arrows in Figure 3) These should be aligned with two indents on your CPU. Flip the CPU upside-down, so the pins are facing downward, align the notches and snugly press the CPU into the socket.

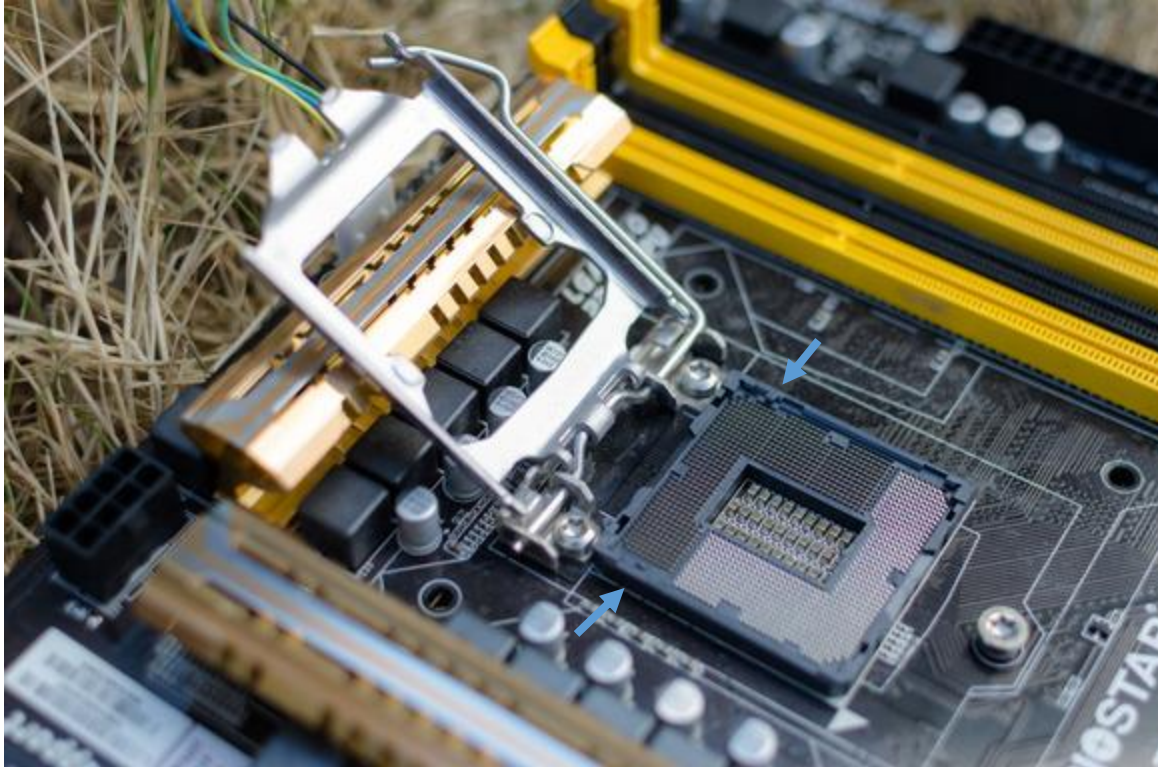


Figure 3

9. Now flip the CPU cover down and use the lever to latch it into place. It should be firmly holding the CPU into the socket.

10. Next squeeze a pea-sized dot of thermal paste onto the top of the CPU. Turn a Ziploc bag inside out, and then using your finger from inside the bag, spread the thermal paste in an even layer on top of the CPU.

WARNING/CAUTION: This step is vital to ensure that there is a good connection between the CPU and the heatsink so that your computer doesn't overheat. Don't ever use just your finger for this step or the oils from your hand could ruin the conductivity.

10. Lastly either install your nonstock cooling fan according to its own directions, or simply position the Intel stock fan over the CPU, lower it on, then connect the 4 pushpins and the power cord.

Sources-

https://en.wikipedia.org/wiki/Central_processing_unit -- CPU refresher

<http://www.pcworld.com/article/2957260/components-processors/how-to-install-an-intel-or-amd-cpu-in-your-computer.html> -- pictures