Motherboards

The motherboard, the foundation that holds our computer together. It lets us expand our computers functionality by adding expansion cards. It routes power from the power supply, and it allows the different parts of the computer to communicate with each other. In short, it's a total boss. Every motherboard has a few key characteristics. First is the chipset, which decides how components talk to each other on our machine. The chipset on motherboards is made up of two chips. One is called the Northbridge that interconnects stuff like RAM and video cards. The other chip is the Southbridge, which maintains our IO or input-output controllers, like hard drives and USB devices, that input and output data. In some modern CPUs, the Northbridge has been directly integrated into the CPU so there isn't a separate Northbridge chip set. The chipset is a key component of our motherboard that allows us to manage data between our CPU, RAM, and peripherals. Peripherals are the external devices we connect to our computer, like a mouse, keyboard, and the monitor. In addition to the chipsets, motherboards have another key characteristic which allows the use of expansion slots. Expansion slots also give us the ability to increase the functionality of our computer. If you wanted to upgrade your graphics card, you could purchase one and just install it on your motherboard through the expansion slot. The standard for an expansion bus today is the PCI Express or Peripheral Component Interconnect express. A PCIe bus looks like a slot on the motherboard and a PCIe base expansion card looks like a smallest circuit board. The last component of motherboards that we'll discuss is form factor. There are different size of motherboards that are available today. These sizes of form factors determine the amount of stuff we can put in it and the amount of space we'll have. The most common form factor for motherboards is ATX, which stands for Advanced Technology Extended. ATX actually comes in different sizes too. In desktops, you'll commonly see full-sized ATXs. If you don't want to use an ATX form factor, you could use an IT or information technology extended form factor. These are much smaller than ATX boards. For example, the Intel NUC uses a variation of the ATX board, which comes in three board sizes; mini ITX, nano ITX, and pico ITX. When building your computer, you will need to keep in mind what type of form factor you want. Do you want to build something small that can't handle as much workload, or do you want a powerhouse workstation that you can add lots of functionality to? The form factor will also play a role into what expansion slots you might want to use. Understanding motherboards and their characteristics can be a big plus one fixing hardware issues since things like the type of RAM module or processes socket are dependent on the kind of motherboard they need to fit into. Let's say you're responding to a ticket for a user who's having video problems, you don't want to make it all the way to their desk only to realize the graphics card you bought as a replacement doesn't fit the motherboard their computer uses.

Revision #1
Created 2023-05-29 09:27:45 UTC by naruzkurai
Updated 2023-05-29 10:25:50 UTC by naruzkurai