

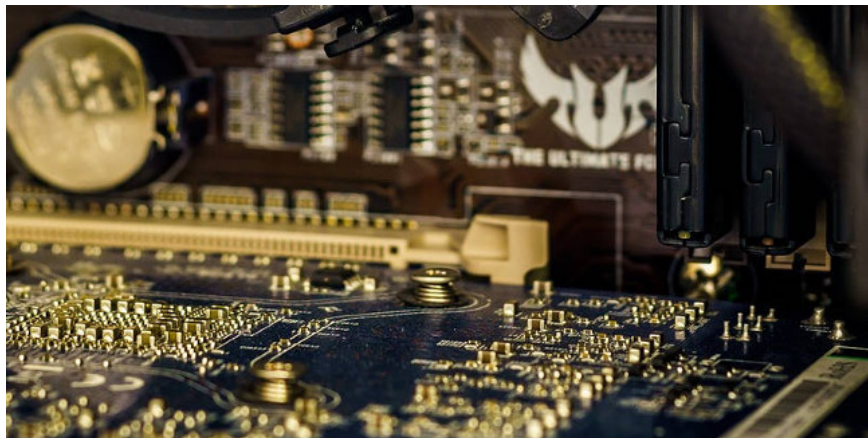
# What is firmware? How is Firmware different from Software?

What is firmware? How is Firmware different from Software? Let's TipsMake.com find out in this article offline!

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With many "-wares" in computers, it can make some of us confused about definitions and concepts. We cannot explain all of the "tools", in this article we will discuss what **the term "firmware" is and how it differs from software (software)** . Invite you to consult!

## What is firmware?



Surely we often get confused - **is the firmware software or software** ? According to *Wikipedia* , the firmware is "a type of computer program that provides low-level control of the device's specific hardware."

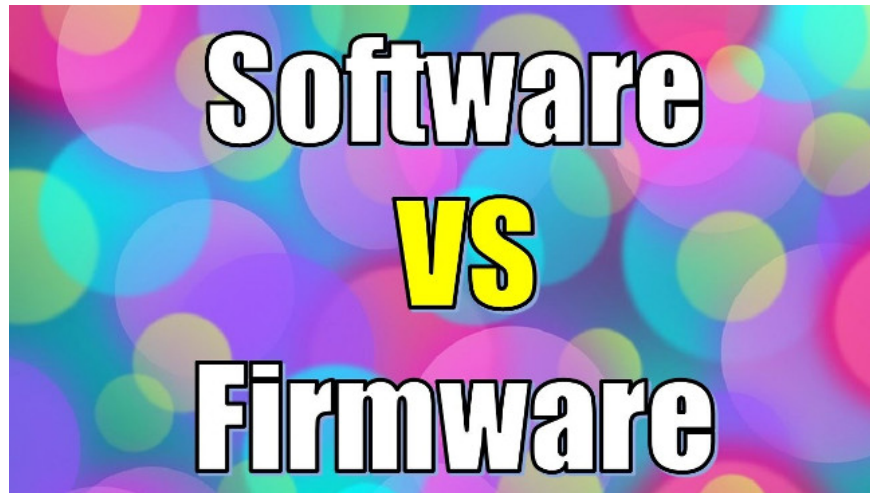
Almost any device today, whether it's computer, phone, stereo, car or washing machine, comes from the manufacturer with a number of different types of firmware.

**Firmware** is a term used to refer to fixed computer programs and low-level control of many electronic devices. Some good examples of firmware can be seen from products such as remote controllers or pocket computers, to hardware devices such as hard drives, keyboards, thin transistor LCD screens or memory cards, industrial robots, .

For simple devices, firmware is all they need to operate. For more advanced devices like computers, you need more software - for example, operating systems and software applications - to use them.

Moreover, firmware is also present in more sophisticated consumer devices to meet the basic processes of the device as well as perform more advanced functions.

## **Firmware vs Software: How is Firmware different from Software?**

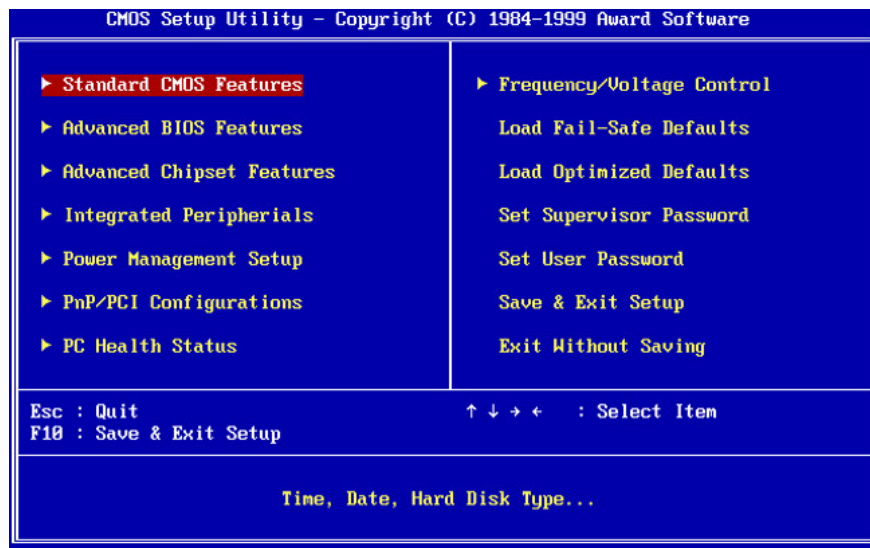


**There are no clear boundaries between firmware and software.** However, firmware is mainly concerned with very basic and low-end processes in a device. If there is no firmware, the device cannot work at all.

Simple firmware is primarily in read-only memory, or OTP / programmable readable memory, when more complex firmware usually resides in flash memory so it can be updated. Common reasons for firmware updates include fixing bugs or adding functions to the device.

Once again you need to understand that - **firmware is a series of software software** ; That is programming code. The confusion comes from the fact that the typical "software - software" we use to refer to programs like Microsoft Word, web browser, etc. while the software is practically every code you can find. on machine equipment (computer, phone, car or any other smart device).

It is more accurate to call software, such as Microsoft Word, web browser, etc. In addition, it is also called "application software" because they are applications. However, this is too vague and impractical. This is how "application software" is simply "software".



One of the main differences between firmware and application software is that the **firmware is stored in unstable memory** (ROM, EPROM, or flash memory), while the application software can work from memory. variable, unstable and virtual.

In fact, firmware in memory has a size limit meaning that a firmware program must be small in size. Firmware can be as small as a few kilobytes, depending on the specifics of the device, it may be larger.

**Update frequency is a big difference between firmware and application software** . In many devices, the firmware is not updated by the user and often the device manufacturer does not allow the user to access the firmware.

For example, on devices such as hard disks, optical drives, consumer electronics, etc., users often have no chance to adjust the firmware. This is good because if the user can **make the firmware mess of these devices** , the result may be a device that stops working.

In other cases, ie computer **BIOS** and smartphone firmware and music player, users can update. This is even recommended because by providing firmware updates, the manufacturer can fix bugs in previous software versions or provide new features.

However, even if a device allows for software updates, you need to be careful and really, really, really need to know what you're doing because otherwise you might have to 'bid' the device. and certainly this is not what you want.

**Basically, this is what you need to know about firmware.**

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2. What is npm shrinkwrap and when should it be used?
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