

Why does Windows report my processor speed twice, with slightly different values?

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If you open the Settings app and go to System, About, the first information block contains basic hardware information like the processor and RAM. But why does the processor speed get reported twice, sometimes with slightly different values?

Processor Intel(R) Core(TM) i7-4790 CPU @ 3.60GHz 3.71GHz

This field is actually showing two pieces of information, one after the other. Let's break it down.

Processor Intel(R) Core(TM) i7-4790 CPU @ 3.60GHz 3.71GHz

Processor brand string

Speed

The processor brand string comes from the [unreliable](#) CPUID function codes [0x80000002 through 0x80000004](#), which returns an arbitrary 47-character string¹ intended to be used for processor branding identification.

Some processor manufacturers include a CPU speed as part of that string,² which is why you see the “@ 3.60GHz” appended to the CPU identifier.

Windows itself does a rough calculation of the CPU speed and shows it after the processor brand string.

My guess is that this system is being 3% overclocked since 3.71 is 3% larger than 3.60.

¹ Really 48 characters, but it is required to be null-terminated, so only 47 useful characters.

² Perhaps they do it to make it easier to detect overclocking or systems being marketed as faster than they really are.