# Difference between x86 and ARMv7 architecture

|  | **x86 Architecture** | **ARMv7 Architecture** |
| --- | --- | --- |
| Manufacturer | Intel, AMD, VIA, among others | ARM Holdings, Qualcomm, Samsung, among others |
| Processor Type | CISC (Complex Instruction Set Computing) | RISC (Reduced Instruction Set Computing) |
| Power Consumption | Higher power consumption | Lower power consumption |
| Maximum Clock Speed | Lower maximum clock speed | Higher maximum clock speed |
| Cost | More expensive | More affordable |
| Devices | Desktop and laptop PCs, servers, workstations, among others | Mobile devices, tablets, embedded systems, among others |
| Compatible Operating Systems | Windows, Linux, macOS, among others | Android, iOS, Windows Phone, among others |
| Applications | Desktop applications, servers, video editing software, among others | Mobile applications, embedded software, Internet of Things, among others |

# Difference between Laptop and BBB Hardware

|  |  |  |
| --- | --- | --- |
|  | Laptop | BBB |
| Processor | Intel i5-5257U (4) @ 3.100GHz | Generic AM33XX (Flattened Device Tree) (1) @ 1.000GHz |
| Architecture | x86\_64 | armv7l |
| Memory | 8GB | 500MB |

# Time difference between **Laptop** and **BBB**

|  |  |  |
| --- | --- | --- |
|  | Laptop | BBB |
| Make defconfig | 4.744 s | 48.730 s |
| Make | 79.82 s | 887.932 s |

This time difference it’s produced due to the difference in processor. While the Laptop has a quad-core CPU the Beagle Board Black only has a single core, also the clock speed it’s different between the both of them. The laptop runs at 3.1GHz, which is 3 times more than the 1GHz from the BBB.

Along with this, we also have a grate difference in terms of memory having 16 times more memory on the laptop than at the BBB. In conclusion, all this differences affects considerably the performance and increase the compilation time.