

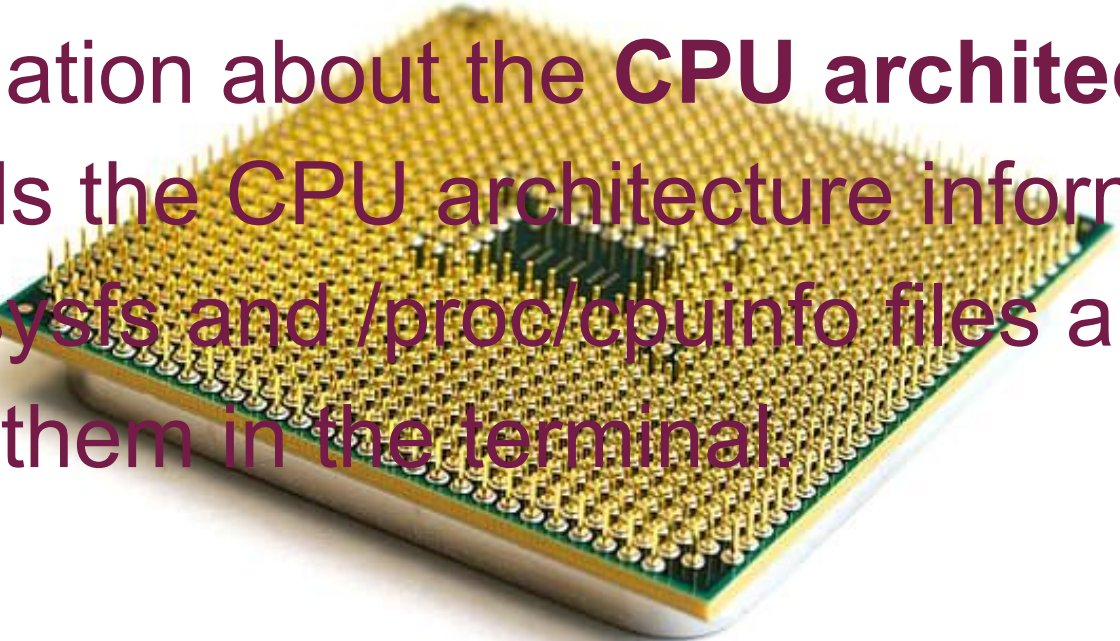


lscpu command output explanation

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lscpu is a command-line utility to display information about the **CPU architecture**. It reads the CPU architecture information from `sysfs` and `/proc/cpuinfo` files and prints them in the terminal.



The information includes the number of CPUs, threads, cores, sockets, and Non-Uniform Memory Access (**NUMA**) nodes. It also displays CPU caches and cache sharing, family, model, bogomIPS, byte order, and stepping.

With `lscpu` command output we can see that the architecture currently in use is `x86_64` and the CPU is capable of operating in both **32-bit, 64-bit modes**.

```
ser@user-pc:~$ lscpu
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
Address sizes:          39 bits physical, 48 bits virtual
CPU(s):                 4
on-line CPU(s) list:    0-3
Thread(s) per core:     2
Core(s) per socket:     2
Socket(s):               1
NUMA node(s):           1
Vendor ID:              GenuineIntel
CPU family:              6
Model:                  61
Model name:              Intel(R) Core(TM) i3-5005U CPU @ 2.00GHz
Stepping:                4
CPU MHz:                 1816.211
CPU max MHz:             1900.0000
CPU min MHz:             500.0000
CpuMIPS:                 3990.84
Virtualization:          VT-x
L1d cache:               64 KiB
L1i cache:               64 KiB
L2 cache:                512 KiB
L3 cache:                3 MiB
NUMA node0 CPU(s):       0-3
```

Byte Order:- Little Endian

Little-endian is an order in which the "little end" (least significant value in the sequence) is stored first.

Address sizes:- 39 bits physical, 48 bits virtual
CPU(s): 4

It means 4 cpu available in my system.

On-line CPU(s) list: 0-3

Currently, I am using 0-3 cpu in my system. That is the point.

Thread(s) per core: 2

It means threads using 2 cores

Core(s) per socket: 2

It means If I put 2 CPUs and 2 'Cores per Socket' it says Sockets: 1

Vendor ID:	GenuineIntel
Model:	61
CPU family:	6
Stepping:	4

It is a version number. Stepping number is (old or new) it is.

CPU MHZ: 1816.211

CPU clock speed determines how fast your CPU can process instructions every second. It measures the number of cycles your CPU can execute, measured in GHz or Mhz.

CPU max MHz:	1500.0000
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Max value defined by CPU

CPU min MHz:	500.0000
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Min value defined by CPU

BogoMIPS: 3990.84

Bogomips is a measurement provided in the Linux operating system that indicates in a relative way how fast the computer processor runs.

Virtualization: VT-x

It means virtualization support

Cache Memory in cpu

The L1 cache is usually split into two sections: the instruction cache and the data cache. The instruction cache deals with the information about the operation that the CPU must perform, while the data cache holds the data on which the operation is to be performed.

L1d cache:	64 KiB	data cache memory
L1i cache:	64 KiB	instruction cache Memory

Very fast and very costly memory.

L2 cache:	512 KiB
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Less fast compared to L1 memory

L3 cache:	3 MiB
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Last level memory.

The L3 cache is the largest but also the slowest cache memory unit. Modern CPUs include the L3 cache on the CPU itself. But while the L1 and L2 cache exist for each core on the chip itself, the L3 cache is more akin to a general memory pool that the entire chip can make use of this memory.

Cache Memory in cpu

