Verificação de Status - Linux

How to Check CPU Information on Linux?

Link: <ins>https://www.scaler.com/topics/cpu-info-linux/</ins>

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Overview

Checking CPU information on Linux is an essential task for understanding your system's hardware configuration and capabilities. The CPU (Central Processing Unit) is a crucial component that performs calculations executes instructions, and manages system resources. You can gather details such as the CPU model, architecture, clock speed, number of cores, cache size, and supported features by checking CPU information.

Introduction

Linux provides various methods to get CPU info linux, from simple commands to more advanced tools. These methods offer different levels of detail and flexibility, allowing you to choose the one that suits your needs. By exploring these methods, you can gain valuable insights into your CPU and optimize your system accordingly.

Some commonly used methods to get CPU info linux include using commands like "lscpu," "cat /proc/cpuinfo," "top" or "htop," "nproc," and utilizing tools such as "hardinfo," "hwinfo," "dmidecode," "inxi," and "lshw." Each method provides specific information about the CPU, enabling you to analyze its capabilities and make informed decisions.

To get CPU info linux is beneficial in various scenarios. It helps system administrators understand the system's performance characteristics, identify hardware limitations, and plan resource allocation. Developers and software enthusiasts can utilize CPU information to optimize applications for specific CPU architectures and features. Additionally, troubleshooting performance issues, diagnosing compatibility problems, and monitoring system utilization is also facilitated by checking CPU information.

In the following sections, we will delve into each method to get CPU info linux, providing step-by-step instructions and explanations on how to use them effectively. By understanding these methods, you will be equipped with the knowledge to gather comprehensive CPU information and make informed decisions based on your system's hardware capabilities.

It's important to note that the specific commands and tools mentioned in this guide may vary depending on your Linux distribution. However, the underlying concepts and approaches remain consistent across distributions.

Checking CPU information on Linux allows you to understand the characteristics and capabilities of your system's CPU. It provides crucial insights for system optimization, troubleshooting, and resource allocation. Utilizing various commands and tools in the Linux ecosystem allows you to gather detailed information about the CPU model, architecture, clock speed, cores, cache size, and supported features. With this knowledge, you can make informed decisions to maximize your system's performance and compatibility.

Methods to Get CPU Information on Linux

Using lscpu Command

The lscpu command provides detailed information about the CPU architecture and characteristics. Open a terminal and type:

```
$ lscpu
```

This command will display information such as CPU model, CPU family, number of cores and threads, clock speed, and cache size. The lscpu command output is easy to read and provides a concise overview of the CPU's specifications.

Using cat /proc/cpuinfo

The /proc/cpuinfo file contains information about the CPU and its features. Open a terminal and run:

```
$ cat /proc/cpuinfo
```

This command will display detailed information about each CPU core, including model name, vendor, cache size, and flags indicating CPU-supported features. The output can be quite extensive, as it provides information for each core on the system.

Using top or htop Command

The top and htop commands are system monitoring tools that provide real-time information about processes and system resources. Open a terminal and type:

```
$ top
```

or

```
$ htop
```

Look for the CPU section, which displays CPU usage, load average, and individual core usage information. While these commands primarily focus on process monitoring, they glance at CPU utilization and core performance.

Using nproc Command

The nproc command displays the number of processing units available. Open a terminal and run:

```
$ nproc
```

This command will output the total number of CPU cores. It provides a simple way to determine the number of cores without diving into detailed specifications.

Using hardinfo Command

The hardinfo command is a graphical tool that provides detailed information about hardware components, including the CPU. Install it if it's not already available and run:

```
$ hardinfo
```

Navigate to the "Processor" section to view CPU-related information. And click generate report. Hardinfo offers a user-friendly interface and presents CPU details in an organized manner.

hardinfo command output

hardinfo system summary

Using hwinfo Command

The hwinfo command is a powerful hardware information tool. Install it if needed and execute:

```
$ hwinfo --cpu
```

This command will provide comprehensive information about the CPU, including architecture, clock speed, cache size, and supported features. The output may contain a wealth of information, making it suitable for advanced users and system administrators.

Using dmidecode -t Processor Command

The dmidecode command displays information from the system DMI (Desktop Management Interface) table. Open a terminal and run:

```
$ sudo dmidecode -t processor
```

This command will output detailed information about the CPU, such as socket designation, type, family, and characteristics. The dmidecode command extracts information directly from the system's firmware, providing accurate and specific details about the CPU.

Using getconf _NPROCESSORS_ONLN Command

The getconf command retrieves system configuration variables. Open a terminal and type:

```
$ getconf _NPROCESSORS_ONLN
```

This command will display the number of online processors or CPU cores. It is a quick way to obtain the core count without requiring extensive CPU information.

Using Inxi Tool

The inxi tool provides a comprehensive system information overview, including CPU details. Install it if necessary and run:

```
$ inxi -C
```

This command will display CPU-related information, including model, cache size, clock speed, and other relevant details. Inxi is a versatile tool that offers a wide range of system information, making it useful for various purposes.

Using lshw Tool

The lshw command (Hardware Lister) provides detailed information about the system's hardware configuration. Install it if not already available and execute:

```
$ sudo lshw -class processor
```

This command will show detailed information about the processor, including model, vendor, capabilities, clock speed, and more. Lshw generates a comprehensive report that includes various hardware components, making it a valuable tool for system inspection.

Here are some other methods to get Linux CPU info:

1. Using the cpufrequtils Command:

The cpufrequtils package provides utilities for managing CPU frequency scaling. Install it if needed and run:

```
$ cpufreq-info
```

This command will display information about the current CPU frequency scaling settings, including the available scaling governors and the maximum and minimum CPU frequencies.

2. Using the sysfs Filesystem:

Linux provides a sysfs filesystem that exposes information about the system's devices and drivers. Open a terminal and navigate to the "/sys/devices/system/cpu" directory. Inside this directory, you will find subdirectories corresponding to each CPU core. You can access files such as "cpu MHz" to retrieve the current CPU frequency, "cache" to obtain cache-related information, and "cpuinfo_max_freq" to determine the maximum CPU frequency.

3. Using the dmidecode -t 4 Command:

The dmidecode command can also provide information about the CPU sockets available on the system. Open a terminal and run:

```
$ sudo dmidecode -t 4
```

This command will display information about the physical characteristics of the CPU sockets, including socket designation, type, and more.

4. Using the i7z Tool:

The i7z tool is designed for Intel Core i3/i5/i7 CPUs and provides detailed information about their features and status. Install it if necessary and run:

```
$ i7z
```

This command will display CPU temperature, multiplier, core frequency, and more information.

5. Using the sysctl Command:

The sysctl command allows you to view and modify kernel parameters. Open a terminal and run:

```
$ sysctl -a | grep machdep.cpu
```

This command will display CPU-related kernel parameters, including features, capabilities, and cache information.

Utilizing these methods lets you easily retrieve CPU information on your Linux system. Each command or tool provides different levels of detail, allowing you to choose the one that best suits your needs. Understanding your CPU's capabilities and specifications can be beneficial for system optimization, troubleshooting, or hardware compatibility purposes.

Whether you prefer a command-line approach or a graphical tool, Linux offers a variety of options to obtain CPU information. These versatile methods cater to different user preferences, making gathering the necessary information for your specific requirements easier.

Checking CPU information on Linux is crucial for understanding your system's hardware configuration and capabilities. By using various commands and tools such as lscpu, cat /proc/cpuinfo, top, htop, nproc, hardinfo, hwinfo, dmidecode, getconf, inxi, lshw, and more, you can gather detailed information about your CPU, including its model, architecture, clock speed, cache size, and supported features. This knowledge is valuable for system optimization, troubleshooting, resource allocation, and software development. Choose the method that suits your needs and explore the capabilities of your CPU on Linux.

Conclusion

- Checking CPU information on Linux is crucial for understanding your system's hardware configuration and capabilities.
- The lscpu command provides a concise overview of CPU specifications, including the model, family, clock speed, and cache size.
- The cat /proc/cpuinfo command offers detailed information about each CPU core, such as the model name, vendor, cache size, and supported features.
- The top and htop commands provide real-time CPU utilization, load average, and core usage information.
- The nproc command quickly determines the total number of CPU cores without extensive specifications.
- Tools like hardinfo, hwinfo, dmidecode, getconf, inxi, and lshw provide comprehensive reports on CPU and system information.
- The cpufrequtils package allows the management of CPU frequency scaling settings.
- The sysfs filesystem provides access to CPU-related information, including current frequency and cache details.
- The **i7z tool** is designed for Intel Core i3/i5/i7 CPUs and provides detailed information about their features and status.
- The sysctl command lets you view and modify kernel parameters related to CPU information.
- Utilizing these methods and tools allows you to gather detailed CPU information for system optimization, troubleshooting, and software development purposes.

How to Check CPU Temperature on Linux

Link: <ins>https://phoenixnap.com/kb/linux-cpu-temp</ins>

Introduction

Like any electrical component, <ins>CPUs</ins> generate heat when being used. Some resource-demanding programs cause the CPU to increase the clock speed, which results in higher temperatures. Dust buildup also causes the CPU to overheat.

High temperatures shorten the lifespan of sensitive components, so keeping track of CPU temperatures is crucial. This way, you prevent performance throttling or component damage.

In this tutorial, you will learn how to use different tools and in-built utilities to check CPU temperature on Linux machines.

Prerequisites

- A machine running Linux
- An account with sudo/root privileges

Check CPU Temperature Using Lm-Sensors

Lm-sensors is a command-line utility for <ins>hardware</ins> monitoring. Use the tool to check the temperature of the CPU and other components. Follow these steps to install and configure Lm-sensors:

1. Open the terminal and install these packages using a package manager for your distribution. In Ubuntu, use the following command:

```
sudo apt install hddtemp lm-sensors
```

Wait for the **lm-sensors** and **hddtemp** to finish downloading and installing.

2. Execute the `sensors` command to see the CPU temperature. The output shows the current temperature readings of all sensors in the machine. The results include the temperature of each core and maximum thresholds.

Sensors command output on Linux Ubuntu.

3. To check SSD and hard drive temperatures, execute the following command:

```
sudo hddtemp /dev/sda
```

Check hard drive temperature on Linux Ubuntu.

The output shows the temperature of the selected disk.

4. To see which system components you can monitor, run `sudo sensors-detect`.

Answer **YES** to multiple scanning requests until the system scan is complete.

Output showing a summary of sensors detected on Ubuntu.

When the scan completes, the output shows the summary.

5. To ensure that system monitoring works, load the needed modules using the following command:

```
/etc/init.d/kmod start
```

Start kmod service on Ubuntu to monitor hardware temperature.

6. To run the `sensors` command repeatedly and get real-time data in the terminal, execute the following command:

```
watch sensors
```

Real-time output in terminal showing CPU temperature on Ubuntu.

The output refreshes every two seconds and displays the current CPU temperature reading.

Note: To check CPU usage on Linux, read our tutorial on How to check CPU usage.

Check CPU Temperature Using Psensor

Psensor is a **GUI app** that allows you to monitor the temperature of various system components. This utility also allows you to monitor CPU usage and fan speed.

Psensor includes an [applet](#) indicator for Ubuntu, allowing you to display the temperature in the top panel to notify you when the temperatures get too high.

Install Psensor

Before installing Psensor, you need to install and configure Lm-sensors.

1. Run this command to install the necessary packages:

```
sudo apt install lm-sensors hddtemp
```

2. Next, scan for sensors in your machine:

```
sudo sensors-detect
```

Answer **YES** to any scan requests until the scan is completed.

3. To make sure the packages are installed, execute the `sensors` command.

> Sensors command output on Linux Ubuntu.

4. Update the package repository with `sudo apt update`.

5. Install Psensor using the following command:

```
sudo apt install psensor
```

> Install Psensor app on Ubuntu Linux.

Answer **YES** and wait for the installation to finish.

Using Psensor

Search for **Psensor** in the app menu and open the utility. The app displays a graph of the selected values and shows the CPU temperature, CPU and memory usage, free RAM, GPU temperature, and [HDD](#) temperature.

> Psensor app on Ubuntu showing hardware temperatures.

To configure Psensor and set which stats you want to see, follow these steps:

1. Click **Psensor** in the menu bar, followed by **Preferences**.

2. Check off the boxes for the options you want – whether Psensor launches on system startup, the update interval, graph colors, etc.

Psensor app Preferences on Ubuntu Linux.

3. To show CPU or HDD temperatures in the top panel, go to **Sensor Preferences** under the **Application Indicator.** Enable the **Display sensor in the label** option.

Display sensor output in the top label in Ubuntu.

Note: Learn more about monitoring CPU performance by referring to our article on Linux perf, a lightweight command-line utility.

Check Temperature Without Third-Party Utilities

There is a way to use the in-built utilities to check the CPU temperature if you don't want to use third-party apps.

1. To check the CPU temperature without installing a third-party app, use the following command:

```
cat /sys/class/thermal/thermal_zone*/temp
```

Display CPU temperature in Ubuntu without third-party apps.

The output shows the CPU temperature in the five-digit format. Here, 49000 means 49C.

2. If you get several thermal zones and different temperatures, execute the following command to see what a single thermal zone represents:

```
cat /sys/class/thermal/<thermal_zoneNumber>/type
```

For example, run `cat /sys/class/thermal/thermal_zone2/type` to see the type of thermal zone 2.

The CPU temperature is in the zone labeled **x86_pkg_temp**.

3. To see what all the thermal zones are referring to, use:

```
paste <(cat /sys/class/thermal/thermal_zone*/type) <(cat /sys/class/thermal/thermal_zone*/temp) | column -s
$'\t' -t | sed 's/\(.\)..$/.\1°C/'
```

Display CPU temperature in Ubuntu without third-party apps.

The output shows the last stored temperature for that thermal zone in degrees Celsius. In this example, there is only one thermal zone, labeled **x86_pkg_temp**, which represents the CPU temperature.

Conclusion

You now know how to check CPU temperature on Linux using various utilities. The guide also showed how to configure the tools to display other information, such as GPU and HDD temperature.

Next you should read

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Comandos IPMITOOL

Link: https://wiki.joeplaa.com/applications#ipmitoolhttps://wiki.joeplaa.com/applications#ipmitool

Installation

```
apt update && apt install ipmitool
```

Configuration

Create a user with ipmi permissions only in Dell iDrac or HP iLO

Commands

> https://www.tzulo.com/crm/knowledgebase/47/IPMI-and-IPMITOOL-Cheat-sheet.html

Get all sensor data

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> sdr list full
```

Get temperature(s)

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> sdr type Temperature
```

Get fanspeed(s)

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> sdr type Fan
```

Or

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> sdr get Fan1 Fan2 | grep "Sensor
Reading"
```

Get power supply info

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> sdr type 'Power Supply'
```

Enable auto fan control / disable static mode (Dell)

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> raw 0x30 0x30 0x01 0x01
```

Enable static fan control / disable auto mode (Dell)

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> raw 0x30 0x30 0x01 0x00
```

Set fanspeed 20% (Dell)

See the script for other speeds. The last 4 characters differ.

```
ipmitool -I lanplus -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> raw 0x30 0x30 0x02 0xff 0x14
```

Change system state

```
ipmitool -H <iDRAC IP> -U <iDRAC user> -P <iDRAC password> chassis power <status|on|off|cycle|reset>
```

Recommended operating range for Core temperature

Link: https://forums.tomshardware.com/threads/what-happens-if-cpu-temp-hits-90%C2%B0c-or-more.3028572/#post-18951574

Coolers with 92mm fans are low-end to mid-range, which may be somewhat inadequate, since your processor's Thermal Design Power (TDP) is 120 Watts.

What is your ambient temperature? Normal or "Standard" room temperature is 22°C or 72°F, so high ambient temperature will adversely affect Core temperatures.

Although your Xeon X5460 has Thermal Specifications of Tcase 63°C and Tj Max 100°C, Tcase is *not* the limiting Thermal Specification; Tj Max *is*, which is the temperature that your processor will "Throttle" or reduce Core speed to prevent thermal damage.

Tcase is a misleading Specification because it's a *factory only* measurements on the surface of the Integrated Heat Spreader, so Tcase is *not* Core temperature, which is considerably higher. Further, Tcase is only relevant to the stock cooler.

Although 90°C Core temperature isn't quite hot enough to cause Throttling, it's not advisable to push your CPU to the thermal limit, just as you wouldn't operate a vehicle with the temperature gauge pegged in the red "hot" zone.

If your hottest Core is within a few degrees of Throttle temperature, your CPU is already too hot. The consensus among highly experienced and well informed system builders and overclockers, is that cooler is better for ultimate stability, performance and longevity.

As such, all agree it's wise to observe a reasonable thermal limit below Tj Max. So regardless of your rig's environmental conditions, system configuration, workloads or any other variables, _sustained_ Core temperatures above 80°C aren't recommended.

Here's the recommended operating range for Core temperature:

80°C Hot (100% Load)
75°C Warm
70°C Warm (Heavy Load)
60°C Norm
50°C Norm (Medium Load)

40°C Norm
30°C Cool (Idle)

Also, you might want to read this Sticky: **Intel Temperature Guide** - http://www.tomshardware.com/forum/id-1800828/intel-temperature-guide.html

O comando HTOP no Linux

Link:

- 17 de maio de 2022

Está com o seu servidor Linux lento e precisa de comandos para ajudar a descobrir o motivo? O comando htop pode ser um grande aliado na análise de processos e recursos.

O comando **HTOP** é um utilitário de linha de comando que tem como objetivo auxiliar o usuário a monitorar de forma interativa e em tempo real os recursos de seu sistema operacional Linux.

1| Instalar htop no Ubuntu

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sudo apt install htop

2| Instalar htop no CentOS

Copiar

sudo yum install htop

3| Iniciar a ferramenta

Copiar

htop

4| Visão geral da ferramenta

Ao digitar htop é apresentado a tela abaixo:

HTOP Linux

5| Explicando os blocos

Bloco superior

Explicando bloco superior do htop

Bloco Inferior

Explicando bloco inferior do htop

Descrição dos Campos

Campo	Descrição
PID	ID do processo
USER	Dono do processo
PRI	Prioridade do processo (Varia de 0 a 139, sendo que quanto menor mais prioridade)
NI	"Nices Values" afeta o valor da prioridade do processo (Varia de -20 a 19)
VIRT	Total de memória requerida pelo processo (não necessariamente está toda em uso)
RES	Quantidade de memória RAM que o processo está utilizando
SHR	Total de memória Compartilhada usada pelo processo
S	Estado atual do processo
CPU %	Percentual de tempo de CPU que o processo está utilizando
MEM %	Percentual de Memória RAM que o processo está utilizando
TIME +	Tempo de processador que o processo está utilizando
COMMAND	Comando que iniciou o processo

5| Opções via CommandLine

O htop permite que você passe opções/ argumentos na execução dele para ajudar na análise

5.1| Delay

O comando htop muda as informações apresentadas rapidamente, pois os processos estão constatemente sendo atualizados. Com o comando abaixo o resultado é atualizado com o Delay (atraso) que você definir:

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```
htop -d 15
```

O argumento acima tem o delay de 1 segundo, pois é calculado em décimo de segundo.

5.2| Filtro com PID

É possível filtrar com um determinado PID e exibir as informações deles

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```
htop -p 1,19296
```

Filtrar PID no HTOP

Conclusão

Assim como o gerenciador de tarefas no Windows, o comando htop é realmente muito poderoso e com certeza irá lhe ajudar na análise de qualquer caso.

Por fim, agradecemos a leitura e esperamos que este post tenha te ajudado de alguma maneira!

Caso tenha alguma dúvida, entre em contato conosco pelo Telegram , Facebook ou Instagram !

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