

# How to check Raspberry Pi version and other system information

If you have one and want to check the Raspberry Pi version or other system information like CPU details, CPU temperature, GPU information, memory details, etc., you can do it this way. easily using the Terminal window.

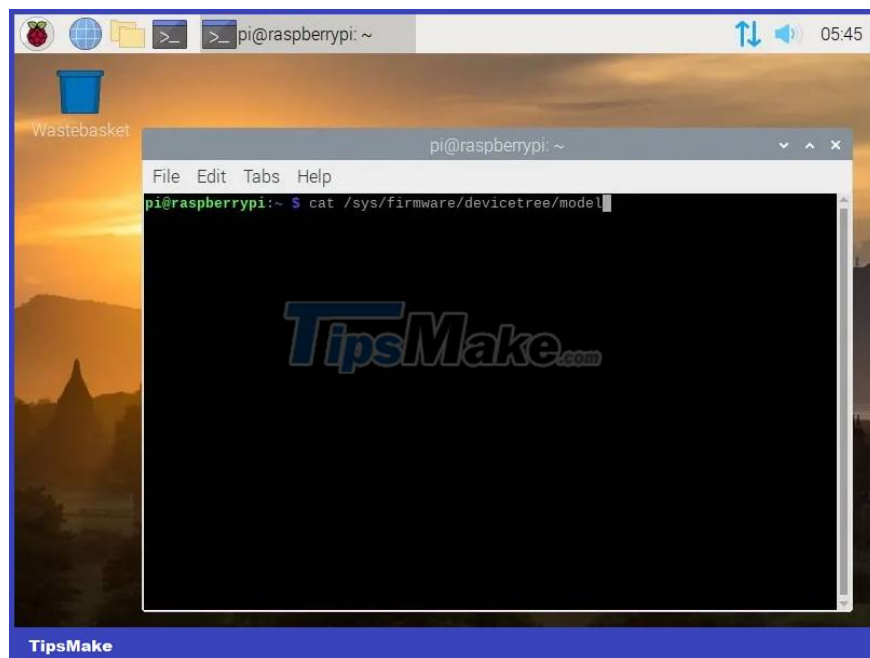
Raspberry Pi is a popular and economical single-board computer with a lot of interesting use cases. If you have one and want to check the Raspberry Pi version or other system information like CPU details, CPU temperature, GPU information, memory details, etc., you can do it this way. easily using the Terminal window.

## Check your Raspberry Pi version or board model

Each Raspberry Pi is based on a specific model or board version, such as Raspberry Pi 5, Raspberry Pi 4, etc. On the Raspberry Pi OS, much of the system information can be found in the 'file system' `./proc` .

If you want to check your Raspberry Pi version, execute the following command in a Terminal window:

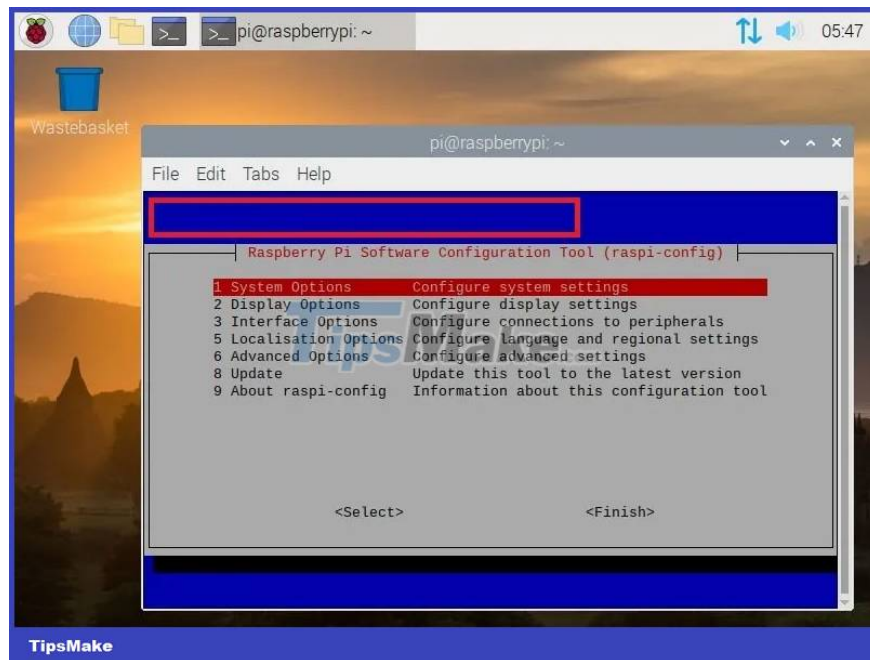
```
cat /sys/firmware/devicetree/model
```



The output will display the Raspberry Pi's board model number, which you may need if you want to replace it or need spare parts for it. You may also need this information for different Raspberry Pi projects you are thinking of.

You can also use the `ls` command to check your Raspberry Pi version. Enter the following command and press **Enter** :

```
sudo raspi-config
```



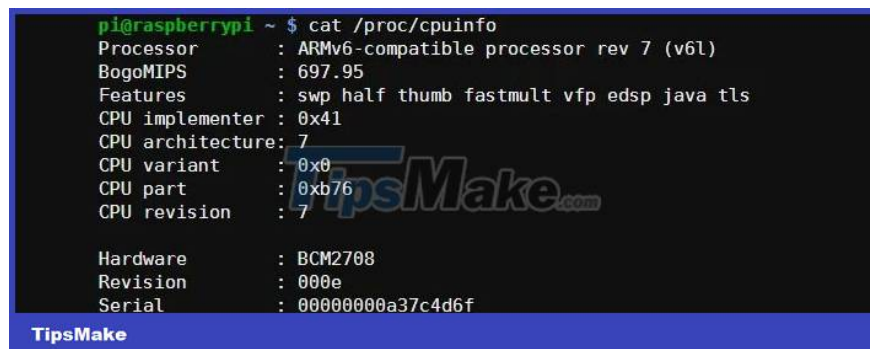
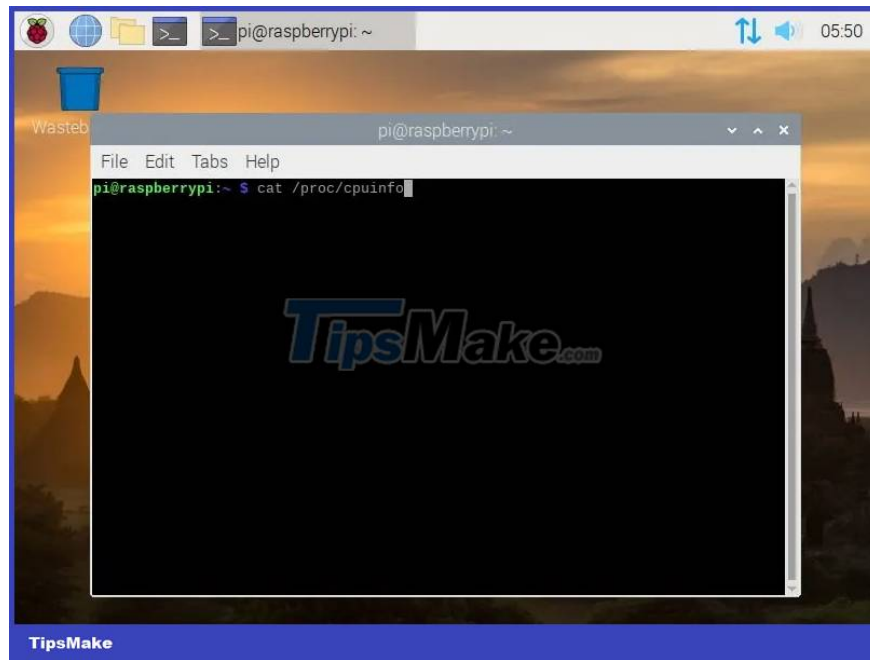
The output will open the Raspberry Pi Software Configuration Tool and will display the board model at the top of the window, just below the menu options.

## Check the Raspberry Pi CPU model

In the `/proc` file system, you can access the `cpuinfo` file, which contains data about your Raspberry Pi CPU. This is useful when you are curious about CPU architecture, manufacturer, serial number, etc.

To access this information, simply execute the following command:

```
cat /proc/cpuinfo
```



The output will tell you a few things about your Raspberry Pi. You'll see the CPU model and vendor in the corresponding line items. For example, if you see something like **ARMv6 Processor** or **ARMv7 Processor** , this is because the Raspberry Pi has a processor based on the ARM architecture (and not Intel like in Windows PCs and Macs)

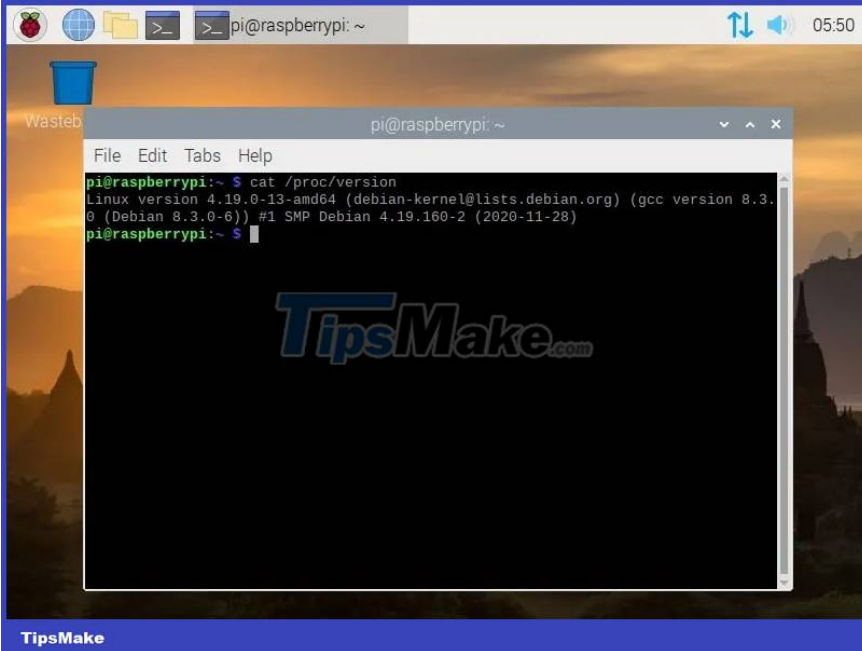
You may also see processors using ARMv6 or AMRv7 instruction sets. The ARMv6 instruction set is one of the older ARM designs. Most modern smartphones and tablets use the ARMv7 architecture, and the new 64-bit ARMv8 instruction set is becoming more and more popular.

## Check Raspberry Pi OS version

Besides hardware information, you can also access software information about your Raspberry Pi, such as the operating system version. Almost all Raspberry Pi units will run some or other version of Linux (although you can also run Windows 11 on the Raspberry Pi).

To check exactly which Linux distribution and version you are running, you can execute the following command:

```
cat /proc/version
```

A screenshot of a Raspberry Pi desktop environment. The desktop background is a scenic image of a sunset over mountains. A terminal window is open, displaying the output of the command 'cat /proc/version'. The output text is: 'Linux version 4.19.0-13-amd64 (debian-kernel@lists.debian.org) (gcc version 8.3.0 (Debian 8.3.0-6)) #1 SMP Debian 4.19.160-2 (2020-11-28)'. The terminal window has a menu bar with 'File', 'Edit', 'Tabs', and 'Help'. The desktop has a taskbar at the top with icons for a trash bin, a globe, and a terminal. The time '05:50' is shown in the top right corner. A 'TipsMake.com' watermark is visible in the bottom right of the terminal window and at the bottom of the desktop.

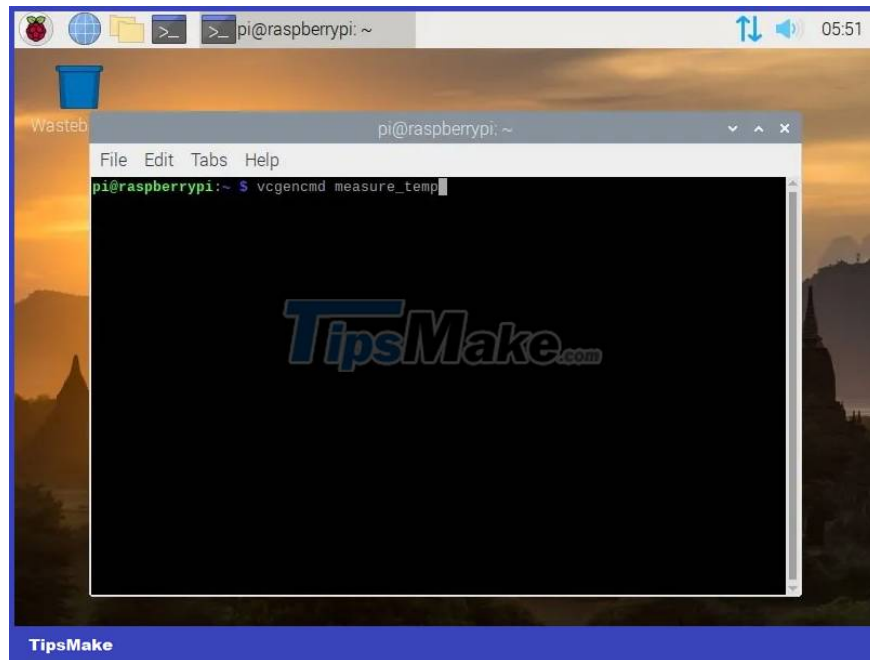
The output will show you a line of detailed information about your operating system version.

## Check Raspberry Pi CPU temperature

Information found in '/proc' is available on all Linux systems; However, the Raspberry Pi also has a special command available to display information specific to the Raspberry Pi board. The `vcgencmd` command can access many Raspberry Pi-specific information, one of which is CPU temperature.

If you like to overclock your Raspberry Pi, you will need access to CPU temperatures a lot. Execute the following command to do so:

```
vcgencmd measure_temp
```



The output will be a single line reporting the temperature:

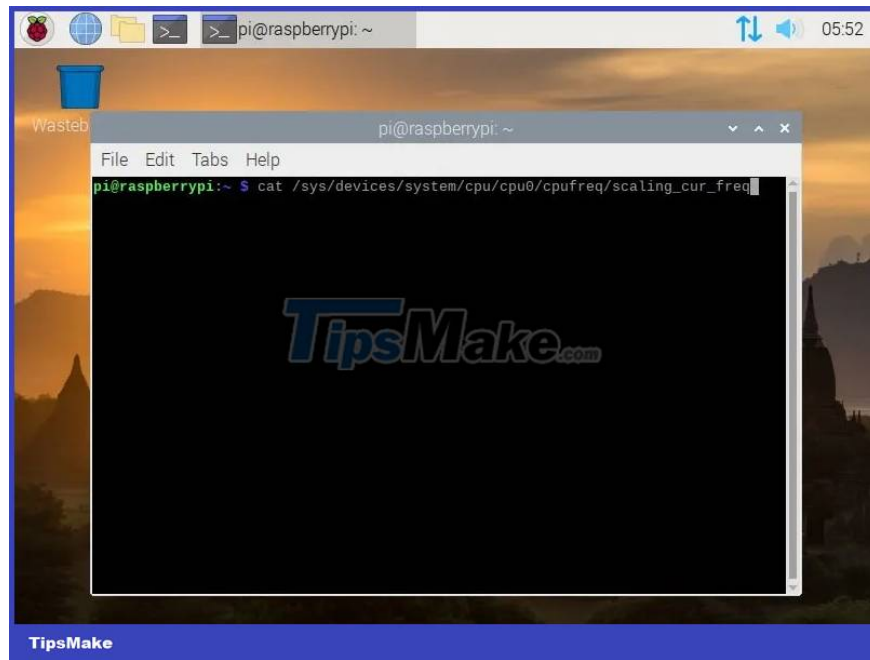
```
temp=50.8 'C
```

## Check Raspberry Pi CPU clock speed

If you're overclocking or simply using one of those Raspberry Pi cases that are too compact and don't have enough airflow, you'll probably also want to check your CPU frequency. Using a simple command, you can see the current CPU frequency or clock speed along with the minimum and maximum frequency.

Execute the following commands one after another:

```
cat /sys/devices/system/cpu/cpu0/cpufreq/scaling_cur_freq cat /sys/devices/system
```

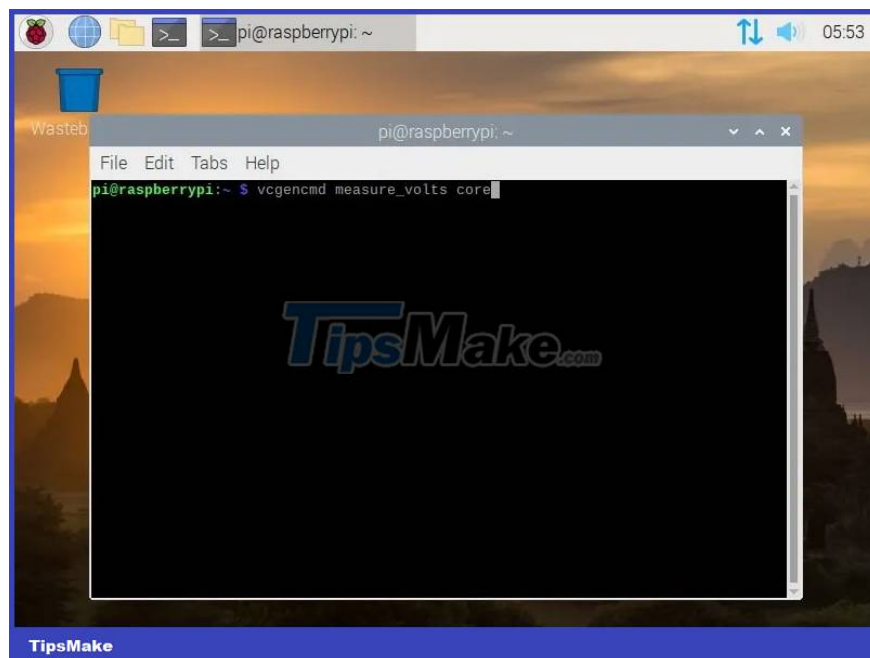


The output will be in kilohertz (kHz), so 950,000 will mean the CPU frequency is 950 MHz.

## Check Raspberry Pi CPU voltage

If you want to find the internal voltage of your Raspberry Pi CPU, there is another `vcgencmd` command that you may find useful. Enter the following information in the Terminal window and press **Enter** :

```
vcgencmd measure_volts core
```



The output will look something like this:

```
volt=1.20V
```

This command can also be used to find the voltage for **sdram\_c**, **sdram\_i** and **sdram\_p**. The following shell command will display all voltages:

```
for id in core sdram_c sdram_i sdram_p ; do echo -e "$id:t$(vcgencmd measure_vol
```

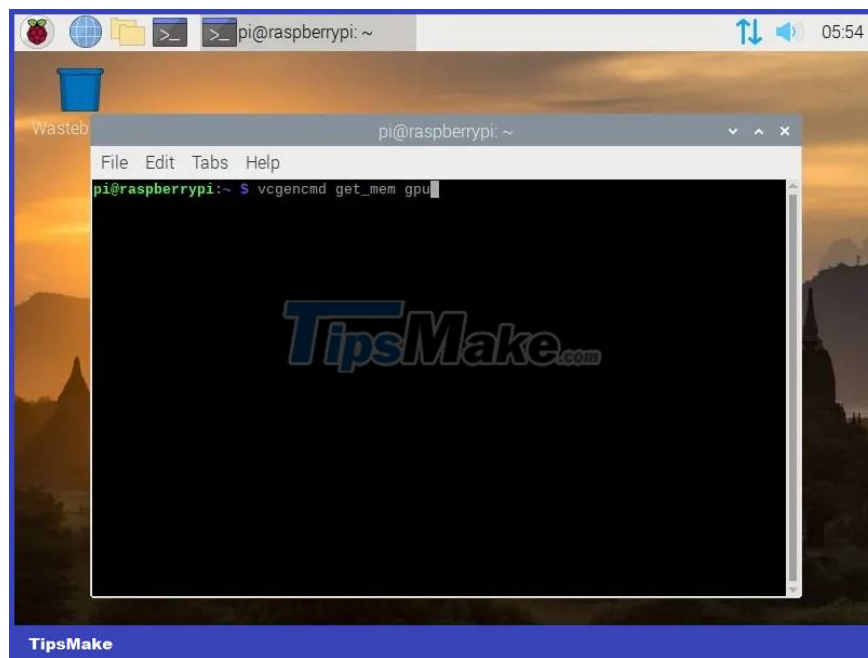
## Check Raspberry Pi GPU temperature and memory usage

On the Raspberry Pi board, the temperature sensors for the CPU and GPU are the same. Therefore, the same command used to check CPU temperature can also be used here:

```
vcgencmd measure_temp
```

To check GPU memory usage, you can execute the following command:

```
vcgencmd get_mem gpu
```

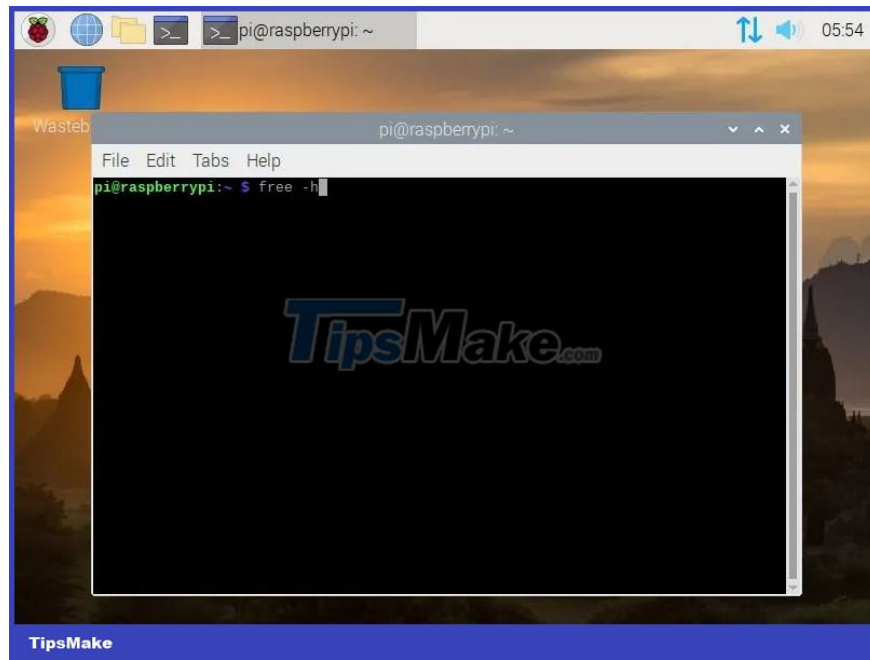


What this command actually shows is the cable's allocation of GPU memory in megabytes (MB).

## Check Raspberry Pi RAM information

You can also check your Raspberry Pi's RAM or memory details if you want, such as how much RAM is available or even how much hard drive space you have. To do this, execute the following command:

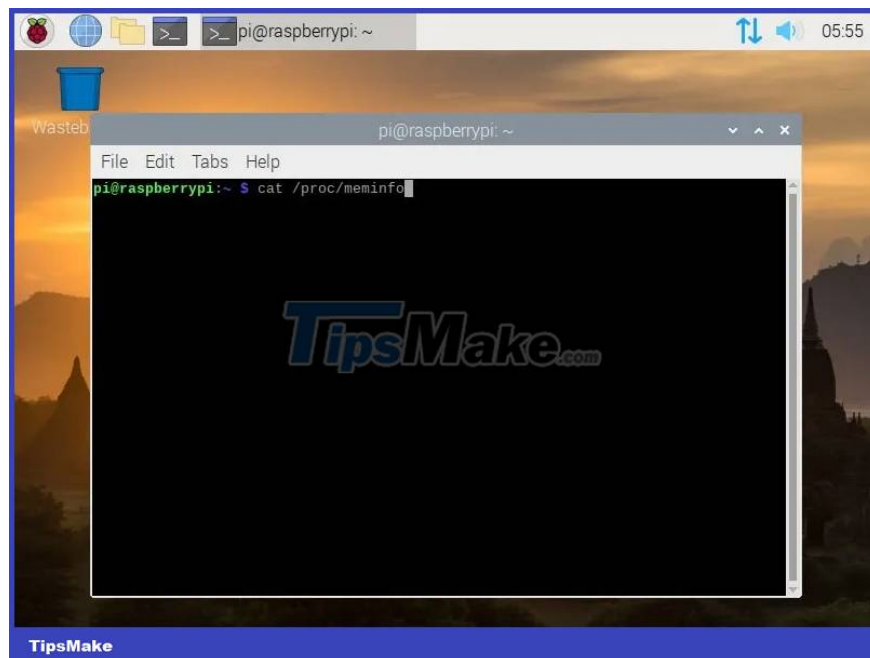
```
free -h
```



The output will show you total memory, used memory, free memory, shared memory, cache memory, and available memory on the same line. You can also view hard drive memory in the **Swap** line .

If you want more details about RAM, you can execute the following command:

```
cat /proc/meminfo
```



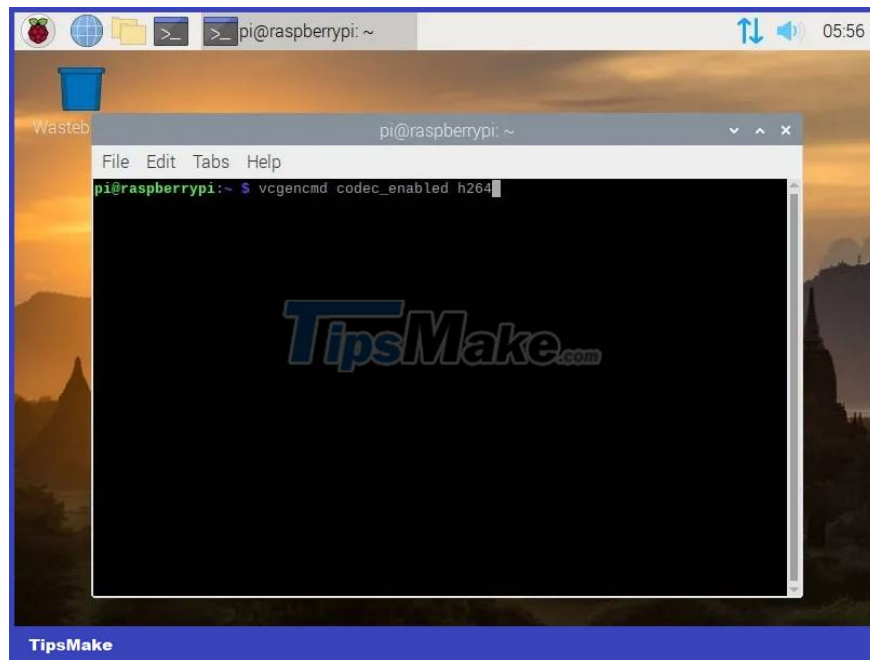
This output will show you information such as active memory, inactive memory, mapped memory, dirty memory (memory representing data on the drive that has been changed but not written out yet). ) and hardware damaged memory.

# Check out the Raspberry Pi hardware codec

If you want to see which hardware codecs are enabled on your Raspberry Pi, the **codecname** parameter can be quite useful. You just need to enter the command along with the name of the codec you want to query. Enter the following information and press **Enter** :

```
vcgencmd codec_enabled CODECNAME
```

Here, CODECNAME should be replaced by one of the options **H264, MPG2, WVC1, MPG4, MJPG** or **WMV9** .



To save time repeating commands for every codec, you can use this simple shell script:

```
for codec in H264 MPG2 WVC1 MPG4 MJPG WMV9 ; do echo -e "$codec:t$(vcgencmd codec_enabled $codec)"; done
```

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