

[NAME](#) | [SYNOPSIS](#) | [DESCRIPTION](#) | [OPTIONS](#) | [FILES](#) | [SEE ALSO](#) | [AUTHORS](#) | [REPORTING BUGS](#) | [COLOPHON](#)

Search online pages

FREE(1)

User Commands

FREE(1)

NAME [top](#) 显示系统中空闲和已使用内存的总量

`free` - Display amount of free and used memory in the system

SYNOPSIS [top](#)

`free` [*options*] 示例: `free -m`

DESCRIPTION [top](#)

物理 (RAM) 和交换空间

`free` displays the total amount of free and used physical and swap memory in the system, as well as the buffers and caches used by the kernel. The information is gathered by parsing /proc/meminfo. The displayed columns are:

展示列: 内核使用的缓冲区和缓存

total Total installed memory (MemTotal and SwapTotal in /proc/meminfo) 系统总的物理内存

used Used memory (calculated as total - free - buffers - cache) 已使用的内存

free Unused memory (MemFree and SwapFree in /proc/meminfo) 未使用的内存

shared Memory used (mostly) by tmpfs (Shmem in /proc/meminfo, available on kernels 2.6.32, displayed as zero if not available)

buffers Memory used by kernel buffers (Buffers in /proc/meminfo)

内核缓冲区

cache Memory used by the page cache and slabs (Cached and SReclaimable in /proc/meminfo)

页面缓存和对象缓存slab槽

buff/cache Sum of buffers and cache

available Estimation of how much memory is available for starting new applications, without swapping. Unlike the data provided by the **cache** or **free** fields, this field takes into account page cache and also that not all reclaimable memory slabs will be reclaimed due to items being in use (MemAvailable in /proc/meminfo, available on kernels 3.14, emulated on kernels 2.6.27+, otherwise the same as **free**)

OPTIONS [top](#)

-b, --bytes Display the amount of memory in bytes.

-k, --kibi Display the amount of memory in kibibytes. This is the

default.

- m, --mebi**
Display the amount of memory in mebibytes.
- g, --gibi**
Display the amount of memory in gibibytes.
- tebi** Display the amount of memory in tebibytes.
- pebi** Display the amount of memory in pebibytes.
- kilo** Display the amount of memory in kilobytes. Implies **--si**.
- mega** Display the amount of memory in megabytes. Implies **--si**.
- giga** Display the amount of memory in gigabytes. Implies **--si**.
- tera** Display the amount of memory in terabytes. Implies **--si**.
- peta** Display the amount of memory in petabytes. Implies **--si**.
- h, --human**
Show all output fields automatically scaled to shortest three digit unit and display the units of print out. Following units are used.
- B = bytes
K = kibibyte
M = mebibyte
G = gibibyte
T = tebibyte
P = pebibyte
- If unit is missing, and you have exbibyte of RAM or swap, the number is in tebibytes and columns might not be aligned with header.
- w, --wide**
Switch to the wide mode. The wide mode produces lines longer than 80 characters. In this mode **buffers** and **cache** are reported in two separate columns.
- c, --count *count***
Display the result *count* times. Requires the **-s** option.
- l, --lohi**
Show detailed low and high memory statistics.
- s, --seconds *seconds***
Continuously display the result delay *seconds* apart. You may actually specify any floating point number for *delay*, **usleep(3)** is used for microsecond resolution delay times.
- si** Use kilo, mega, giga etc (power of 1000) instead of kibi, mebi, gibi (power of 1024).
- t, --total**
Display a line showing the column totals.
- help** Print help.
- V, --version**
Display version information.

FILES [top](#)

/proc/meminfo
memory information

SEE ALSO [top](#)

[ps\(1\)](#), [slabtop\(1\)](#), [top\(1\)](#), [vmstat\(8\)](#).

AUTHORS [top](#)

Written by Brian Edmonds.

REPORTING BUGS [top](#)

Please send bug reports to procps@freelists.org

COLOPHON [top](#)

This page is part of the *procps-ng* (/proc filesystem utilities) project. Information about the project can be found at <https://gitlab.com/procps-ng/procps>. If you have a bug report for this manual page, see <https://gitlab.com/procps-ng/procps/blob/master/Documentation/bugs.md>. This page was obtained from the project's upstream Git repository <https://gitlab.com/procps-ng/procps.git> on 2016-03-15. If you discover any rendering problems in this HTML version of the page, or you believe there is a better or more up-to-date source for the page, or you have corrections or improvements to the information in this COLOPHON (which is *not* part of the original manual page), send a mail to man-pages@man7.org

procps-ng

Apr 2015

FREE(1)
