vmstat

NAME

vmstat - Report virtual memory statistics

SYNOPSIS

vmstat [**-a**] [**-n**] [*delay* [*count*]]
vmstat [**-f**] [**-s**] [**-m**]
vmstat [**-S unit**]
vmstat [**-d**]
vmstat [**-p disk partition**]
vmstat [**-V**]

DESCRIPTION

vmstat reports information about processes, memory, paging, block IO, traps, and cpu activity.

The first report produced gives averages since the last reboot. Additional reports give information on a sampling period of length *delay*. The process and memory reports are instantaneous in either case.

Options

The **-a** switch displays active/inactive memory, given a 2.5.41 kernel or better.

The **-f** switch displays the number of forks since boot. This includes the fork, vfork, and clone system calls, and is equivalent to the total number of tasks created. Each process is represented by one or more tasks, depending on thread usage. This display does not repeat.

The **-m** displays slabinfo.

The **-n** switch causes the header to be displayed only once rather than periodically.

The **-s** switch displays a table of various event counters and memory statistics. This display does not repeat.

delay is the delay between updates in seconds. If no delay is specified, only one report is printed with the average values since boot.

count is the number of updates. If no count is specified and delay is defined, *count* defaults to infinity.

The **-d** reports disk statistics (2.5.70 or above required)

The **-p** followed by some partition name for detailed statistics (2.5.70

or above required)

The **-S** followed by k or K or m or M switches outputs between 1000, 1024, 1000000, or 1048576 bytes

The **-V** switch results in displaying version information.

FIELD DESCRIPTION FOR VM MODE

Procs
r: The number of processes waiting for run time.
b: The number of processes in uninterruptible sleep.

Memory
swpd: the amount of virtual memory used.
free: the amount of idle memory.
buff: the amount of memory used as buffers.
cache: the amount of memory used as cache.
inact: the amount of inactive memory. (-a option)
active: the amount of active memory. (-a option)

Swap
si: Amount of memory swapped in from disk (/s).
so: Amount of memory swapped to disk (/s).

IO
bi: Blocks received from a block device (blocks/s).
bo: Blocks sent to a block device (blocks/s).

System
in: The number of interrupts per second, including the clock.
cs: The number of context switches per second.

CPU
These are percentages of total CPU time.
us: Time spent running non-kernel code. (user time, including nice time)
sy: Time spent running kernel code. (system time)
id: Time spent idle. Prior to Linux 2.5.41, this includes IO-wait time.
wa: Time spent waiting for IO. Prior to Linux 2.5.41, shown as zero.

FIELD DESCRIPTION FOR DISK MODE

Reads
total: Total reads completed successfully
merged: grouped reads (resulting in one I/O)
sectors: Sectors read successfully
ms: milliseconds spent reading

Writes
total: Total writes completed successfully
merged: grouped writes (resulting in one I/O)
sectors: Sectors written successfully
ms: milliseconds spent writing

IO

cur: I/O in progress
s: seconds spent for I/O

FIELD DESCRIPTION FOR DISK PARTITION MODE

reads: Total number of reads issued to this partition
read sectors: Total read sectors for partition
writes : Total number of writes issued to this partition
requested writes: Total number of write requests made for partition

FIELD DESCRIPTION FOR SLAB MODE

cache: Cache name
num: Number of currently active objects
total: Total number of available objects
size: Size of each object
pages: Number of pages with at least one active object
totpages: Total number of allocated pages
pslab: Number of pages per slab

NOTES

vmstat does not require special permissions.

These reports are intended to help identify system bottlenecks. Linux **vmstat** does not count itself as a running process.

All linux blocks are currently 1024 bytes. Old kernels may report blocks as 512 bytes, 2048 bytes, or 4096 bytes.

Since procps 3.1.9, vmstat lets you choose units (k, K, m, M) default is K (1024 bytes) in the default mode

vmstat uses slabinfo 1.1 FIXME

FILES

/proc/meminfo
/proc/stat
/proc/*/stat

SEE ALSO

iostat(1), sar(1), mpstat(1), ps(1), top(1), free(1)

BUGS

Does not tabulate the block io per device or count the number of system calls.

AUTHORS

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Throatwobbler Ginkgo Labs 27 July 1994 **VMSTAT(8)**

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