NAME

sar – system activity reporter

SYNOPSIS

sar [–**aAbcdgkmpqruvwy**] [–**o** *filename*] *t* [*n*]

sar [–**aAbcdgkmpqruvwy**] [–**e** *time*] [–**f** *filename*] [–**i** *sec*] [–**s** *time*]

DESCRIPTION

In the first instance **sar** samples cumulative activity counters in the operating system at *n* intervals of *t* seconds, where *t* should be 5 or greater. If *t* is specified with more than one option, all headers are printed together and the output may be difficult to read. (If the sampling interval is less than 5, the activity of **sar** itself may effect the sample.) If the –**o** option is specified, it saves the samples in *filename* in binary format. The default value of *n* is 1.

In the second instance no sampling interval is specified. **sar** extracts data from a previously recorded *filename*, either the one specified by the –**f** option or, by default, the standard system activity daily data file **/var/adm/sa/sa***dd* for the current day *dd*. The starting and ending times of the report can be bounded using the –**e** and –**s** arguments with *time* specified in the form *hh*[:*mm*[:*ss*]]. The –**i** option selects records at *sec* second intervals. Otherwise, all intervals found in the data file are reported.

OPTIONS

The following options modify the subsets of information reported by **sar**.

–**a** Report use of file access system routines:
iget/s, namei/s, dirblk/s.

–**A** Report all data. Equivalent to –**abcdgkmpqruvwy**.

–**b** Report buffer activity:
bread/s, bwrit/s – transfers per second of data between system buffers and disk or other block devices;
lread/s, lwrit/s – accesses of system buffers;
%rcache, %wcache – cache hit ratios, that is, (1–bread/lread) as a percentage;
pread/s, pwrit/s – transfers using raw (physical) device mechanism.

–**c** Report system calls:
scall/s – system calls of all types;
sread/s, swrit/s, fork/s, exec/s – specific system calls;
rchar/s, wchar/s – characters transferred by read and write system calls. No incoming or outgoing **exec**(2) and **fork**(2) calls are reported.

–**d** Report activity for each block device (for example, disk or tape drive) with the exception of XDC disks and tape drives. When data is displayed, the device specification *dsk-* is generally used to represent a disk drive. The device specification used to represent a tape drive is machine dependent. The activity data reported is:
%busy, avque – portion of time device was busy servicing a transfer request, average number of requests outstanding during that time;
read/s, write/s, blks/s – number of read/write transfers from or to device, number of bytes transferred in 512-byte units;
avseek – number of milliseconds per average seek.

For more general system statistics, use **iostat**(1M), **sar**(1M), or **vmstat**(1M).

See *System Administration Guide, Volume I* for naming conventions for disks.

−g Report paging activities:
pgout/s – page-out requests per second;
ppgout/s – pages paged-out per second;
pgfree/s – pages per second placed on the free list by the page stealing daemon;
pgscan/s – pages per second scanned by the page stealing daemon.
%ufs_ipf – the percentage of UFS inodes taken off the freelist by iget which had reusable pages associated with them. These pages are flushed and cannot be reclaimed by processes. Thus this is the percentage of igets with page flushes.

−k Report kernel memory allocation (KMA) activities:
sml_mem, alloc, fail – information about the memory pool reserving and allocating space for small requests: the amount of memory in bytes KMA has for the small pool, the number of bytes allocated to satisfy requests for small amounts of memory, and the number of requests for small amounts of memory that were not satisfied (failed);
lg_mem, alloc, fail – information for the large memory pool (analogous to the information for the small memory pool);
ovsz_alloc, fail – the amount of memory allocated for oversize requests and the number of oversize requests which could not be satisfied (because oversized memory is allocated dynamically, there is not a pool).

−m Report message and semaphore activities:
msg/s, sema/s – primitives per second.

−p Report paging activities:
atch/s – page faults per second that are satisfied by reclaiming a page currently in memory (attaches per second);
pgin/s – page-in requests per second;
ppgin/s – pages paged-in per second;
pflt/s – page faults from protection errors per second (illegal access to page) or "copy-on-writes";
vflt/s – address translation page faults per second (valid page not in memory);
slock/s – faults per second caused by software lock requests requiring physical I/O.

−q Report average queue length while occupied, and % of time occupied:
runq-sz, %runocc – run queue of processes in memory and runnable;
swpq-sz, %swpocc – these are no longer reported by sar.

−r Report unused memory pages and disk blocks:
freemem – average pages available to user processes;
freeswap – disk blocks available for page swapping.

–u Report CPU utilization (the default):
%usr, %sys, %wio, %idle – portion of time running in user mode, running in system mode, idle with some process waiting for block I/O, and otherwise idle.

–v Report status of process, i-node, file tables:
proc-sz, inod-sz, file-sz, lock-sz – entries/size for each table, evaluated once at sampling point;
ov – overflows that occur between sampling points for each table.

–w Report system swapping and switching activity:
swpin/s, swpot/s, bswin/s, bswot/s – number of transfers and number of 512-byte units transferred for swapins and swapouts (including initial loading of some programs);
pswch/s – process switches.

–y Report TTY device activity:
rawch/s, canch/s, outch/s – input character rate, input character rate processed by canon, output character rate;
rcvin/s, xmtin/s, mdmin/s – receive, transmit and modem interrupt rates.

–e *time* Select data up to *time*. Default is 18:00.

–f *filename* Use *filename* as the data source for **sar**. Default is the current daily data file **/usr/adm/sa/sa***dd*.

–i *sec* Select data at intervals as close as possible to *sec* seconds.

–o *filename*
Save samples in file, *filename*, in binary format.

–s *time* Select data later than *time* in the form *hh*[:*mm*]. Default is 08:00.

EXAMPLES

To see today's CPU activity so far:

example% sar

To watch CPU activity evolve for 10 minutes and save data:

example% sar –o temp 60 10

To later review disk and tape activity from that period:

example% sar –d –f temp

FILES

/var/adm/sa/sa*dd* daily data file, where *dd* are digits representing the day of the month

SEE ALSO

sag(1), **iostat**(1M), **sar**(1M), **vmstat**(1M), **exec**(2), **fork**(2)

System Administration Guide, Volume II

System Administration Guide, Volume I