NAME

iostat – report I/O statistics

SYNOPSIS

/usr/bin/iostat [**–cdDItx**] [**–l** *n*] [*disk* ...] [*interval* [*count*]]

DESCRIPTION

iostat iteratively reports terminal and disk I/O activity, as well as CPU utilization. The first line of output is for all time since boot; each subsequent line is for the prior interval only.

To compute this information, the kernel maintains a number of counters. For each disk, the kernel counts reads, writes, bytes read, and bytes written. The kernel also takes hi-res time stamps at queue entry and exit points, which allows it to keep track of the residence time and cumulative residence-length product for each queue. Using these values, **iostat** produces highly accurate measures of throughput, utilization, queue lengths, transaction rates and service time. For terminals collectively, the kernel simply counts the number of input and output characters.

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

See *Solaris 1.x to Solaris 2.x Transition Guide* for device naming conventions for disks.

OPTIONS

iostat's activity class options default to **tdc** (terminal, disk, and CPU). If any activity class options are specified, the default is completely overridden. Therefore, if only **–d** is specified, neither terminal nor CPU statistics will be reported. The last disk option specified (**–d**, **–D**, or **–x**) is the only one that is used.

–c Report the percentage of time the system has spent in user mode, in system mode, waiting for I/O, and idling.

–d For each disk, report the number of kilobytes transferred per second, the number of transfers per second, and the average service time in milliseconds.

–D For each disk, report the reads per second, writes per second, and percentage disk utilization.

–I Report the counts in each interval, rather than rates (where applicable).

–t Report the number of characters read and written to terminals per second.

–x For each disk, report extended disk statistics. The output is in tabular form.

–l *n* Limit the number of disks included in the report to *n*; the disk limit defaults to 4 for **–d** and **–D**, and unlimited for **–x**. Note: disks explicitly requested (see *disk* below) are not subject to this disk limit.

disk Explicitly specify the disks to be reported; in addition to any explicit disks, any active disks up to the disk limit (see **–l** above) will also be reported.

count Only print *count* reports.

interval Report once each *interval* seconds.

EXAMPLES

example% iostat -xtc 5 2

```
                              extended disk statistics         tty        cpu
disk   r/s  w/s  Kr/s  Kw/s wait actv svc_t  %w  %b   tin tout us sy wt id
sd0    6.2  0.0  21.5   0.0  0.0  0.1  24.1   0  15     0   84  4 94  2  0
sd1    1.8  0.0  14.3   0.0  0.0  0.1  41.6   0   7
sd2    0.0  0.0   0.0   0.0  0.0  0.0   0.0   0   0
sd3    5.6  0.2  25.7   0.2  0.0  0.1  22.5   0  13
                              extended disk statistics         tty        cpu
disk   r/s  w/s  Kr/s  Kw/s wait actv svc_t  %w  %b   tin tout us sy wt id
sd0    2.6  3.0  20.7  22.7  0.1  0.2  59.2   6  19     0   84  3 85 11  0
sd1    4.2  1.0  33.5   8.0  0.0  0.2  47.2   2  23
sd2    0.0  0.0   0.0   0.0  0.0  0.0   0.0   0   0
sd3   10.2  1.6  51.4  12.8  0.1  0.3  31.2   3  31
example%
```

The fields have the following meanings:

disk name of the disk
r/s reads per second
w/s writes per second
Kr/s kilobytes read per second
Kw/s kilobytes written per second
wait average number of transactions waiting for service (queue length)
actv average number of transactions actively being serviced (removed from the queue but not yet completed)
svc_t average service time, in milliseconds
%w percent of time there are transactions waiting for service (queue non-empty)
%b percent of time the disk is busy (transactions in progress)

SEE ALSO

sar(1), **sar**(1M), **vmstat**(1M)

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