Rocky Enterprise Linux 9.2 Manual Pages on command 'vdostats.8'

$ man vdostats.8

VDOSTATS(8)   System Manager's Manual   VDOSTATS(8)

NAME

 vdostats - Display configuration and statistics of VDO volumes

SYNOPSIS

 vdostats [options ...] [device [device ...]]

DESCRIPTION

 vdostats displays configuration and statistics information for the

 given VDO devices. If no devices are given, it displays information

 about all VDO devices.

 The VDO devices must be running in order for configuration and statis?

 tics

  information to be reported.

OPTIONS

 -h, --help

  Show help message and exit.

 -a, --all

  This option is only for backwards compatibility. It is now

  equivalent to --verbose.

--human-readable

    Display block values in readable form (Base 2: 1 KB = 2^10 bytes

    = 1024 bytes).

--si   Modifies the output of the --human-readable option to use SI

    units (Base 10: 1 KB = 10^3 bytes = 1000 bytes). If the --hu?

    man-readable option is not supplied, this option has no effect.

-v, --verbose

    Displays the utilization and block I/O (bios) statistics for the

    selected VDO devices.

-V, --version

    Prints the vdostats version number and exits

OUTPUT

    The default output format is a table with the following columns, simi?

    lar to that of the Linux df utility:

    Device The path to the VDO volume

    1K-blocks

        The total number of 1K blocks allocated for a VDO volume (=

        physical volume size * block size / 1024)

    Used   The total number of 1K blocks used on a VDO volume (= physical

        blocks used * block size / 1024)

    Available

        The total number of 1K blocks available on a VDO volume (= phys?

        ical blocks free * block size / 1024)

    Use%   The percentage of physical blocks used on a VDO volume (= used

        blocks / allocated blocks * 100)

    Space Saving%

        The percentage of physical blocks saved on a VDO volume (= [log?

        ical blocks used - physical blocks used] / logical blocks used)

VERBOSE OUTPUT

    The --verbose option displays VDO device statistics in YAML format for

    the specified VDO devices. The following fields will continue to be re?

    ported in future releases. Management tools should not rely upon the

    order in which any of the statistics are reported.

version

The version of these statistics.

release version

The release version of the VDO.

data blocks used

The number of physical blocks currently in use by a VDO volume

to store data.

overhead blocks used

The number of physical blocks currently in use by a VDO volume

to store VDO metadata.

logical blocks used

The number of logical blocks currently mapped.

physical blocks

The total number of physical blocks allocated for a VDO volume.

logical blocks

The maximum number of logical blocks that can be mapped by a VDO

volume.

1K-blocks

The total number of 1K blocks allocated for a VDO volume (=

physical volume size * block size / 1024)

1K-blocks used

The total number of 1K blocks used on a VDO volume (= physical

blocks used * block size / 1024)

1K-blocks available

The total number of 1K blocks available on a VDO volume (= phys?

ical blocks free * block size / 1024)

used percent

The percentage of physical blocks used on a VDO volume (= used

blocks / allocated blocks * 100)

saving percent

The percentage of physical blocks saved on a VDO volume (= [log?

ical blocks used - physical blocks used] / logical blocks used)

block map cache size

The size of the block map cache, in bytes.

write policy

The write policy (sync, async, or async-unsafe). This is config?

ured via vdo modify --writePolicy=policy.

block size

The block size of a VDO volume, in bytes.

completed recovery count

The number of times a VDO volume has recovered from an unclean

shutdown.

read-only recovery count

The number of times a VDO volume has been recovered from read-

only mode (via vdo start --forceRebuild).

operating mode

Indicates whether a VDO volume is operating normally, is in re?

covery mode, or is in read-only mode.

recovery progress (%)

Indicates online recovery progress, or N/A if the volume is not

in recovery mode.

compressed fragments written

The number of compressed fragments that have been written since

the VDO volume was last restarted.

compressed blocks written

The number of physical blocks of compressed data that have been

written since the VDO volume was last restarted.

The remaining fields are primarily intended for software support and

are subject to change in future releases; management tools should not

rely upon them.

compressed fragments in packer

The number of compressed fragments being processed that have not

yet been written.

slab count

The total number of slabs.

slabs opened

The total number of slabs from which blocks have ever been allo‑
cated.

slabs reopened

The number of times slabs have been re-opened since the VDO was
started.

journal disk full count

The number of times a request could not make a recovery journal
entry because the recovery journal was full.

journal commits requested count

The number of times the recovery journal requested slab journal
commits.

journal entries batching

The number of journal entry writes started minus the number of
journal entries written.

journal entries started

The number of journal entries which have been made in memory.

journal entries writing

The number of journal entries in submitted writes minus the num‑
ber of journal entries committed to storage.

journal entries written

The total number of journal entries for which a write has been
issued.

journal entries committed

The number of journal entries written to storage.

journal blocks batching

The number of journal block writes started minus the number of
journal blocks written.

journal blocks started

The number of journal blocks which have been touched in memory.

journal blocks writing

The number of journal blocks written (with metadatata in active
memory) minus the number of journal blocks committed.

journal blocks written

The total number of journal blocks for which a write has been issued.

journal blocks committed

The number of journal blocks written to storage.

slab journal disk full count

The number of times an on-disk slab journal was full.

slab journal flush count

The number of times an entry was added to a slab journal that was over the flush threshold.

slab journal blocked count

The number of times an entry was added to a slab journal that was over the blocking threshold.

slab journal blocks written

The number of slab journal block writes issued.

slab journal tail busy count

The number of times write requests blocked waiting for a slab journal write.

slab summary blocks written

The number of slab summary block writes issued.

reference blocks written

The number of reference block writes issued.

block map dirty pages

The number of dirty pages in the block map cache.

block map clean pages

The number of clean pages in the block map cache.

block map free pages

The number of free pages in the block map cache.

block map failed pages

The number of block map cache pages that have write errors.

block map incoming pages

The number of block map cache pages that are being read into the cache.

block map outgoing pages

The number of block map cache pages that are being written.

block map cache pressure

The number of times a free page was not available when needed.

block map read count

The total number of block map page reads.

block map write count

The total number of block map page writes.

block map failed reads

The total number of block map read errors.

block map failed writes

The total number of block map write errors.

block map reclaimed

The total number of block map pages that were reclaimed.

block map read outgoing

The total number of block map reads for pages that were being

written.

block map found in cache

The total number of block map cache hits.

block map discard required

The total number of block map requests that required a page to

be discarded.

block map wait for page

The total number of requests that had to wait for a page.

block map fetch required

The total number of requests that required a page fetch.

block map pages loaded

The total number of page fetches.

block map pages saved

The total number of page saves.

block map flush count

The total number of flushes issued by the block map.

invalid advice PBN count

The number of times the index returned invalid advice

no space error count

    The number of write requests which failed due to the VDO volume

    being out of space.

read only error count

    The number of write requests which failed due to the VDO volume

    being in read-only mode.

instance

    The VDO instance.

512 byte emulation

    Indicates whether 512 byte emulation is on or off for the vol?

    ume.

current VDO IO requests in progress

    The number of I/O requests the VDO is current processing.

maximum VDO IO requests in progress

    The maximum number of simultaneous I/O requests the VDO has pro?

    cessed.

current dedupe queries

    The number of deduplication queries currently in flight.

maximum dedupe queries

    The maximum number of in-flight deduplication queries.

dedupe advice valid

    The number of times deduplication advice was correct.

dedupe advice stale

    The number of times deduplication advice was incorrect.

dedupe advice timeouts

    The number of times deduplication queries timed out.

concurrent data matches

    The number of writes with the same data as another in-flight

    write.

concurrent hash collisions

    The number of writes whose hash collided with an in-flight

    write.

flush out

The number of flush requests submitted by VDO to the underlying storage.

write amplification ratio

The average number of block writes to the underlying storage per block written to the VDO device.

bios in...

bios in partial...

bios out...

bios meta...

bios journal...

bios page cache...

bios out completed...

bios meta completed...

bios journal completed...

bios page cache completed...

bios acknowledged...

bios acknowledged partial...

bios in progress...

These statistics count the number of bios in each category with a given flag. The categories are:

bios in

The number of block I/O requests received by VDO.

bios in partial

The number of partial block I/O requests received by VDO. Applies only to 512-byte emulation mode.

bios out

The number of non-metadata block I/O requests submitted by VDO to the storage device.

bios meta

The number of metadata block I/O requests submitted by VDO to the storage device.

bios journal

The number of recovery journal block I/O requests submit?

ted by VDO to the storage device.

bios page cache

The number of block map I/O requests submitted by VDO to

the storage device.

bios out completed

The number of non-metadata block I/O requests completed

by the storage device.

bios meta completed

The number of metadata block I/O requests completed by

the storage device.

bios journal completed

The number of recovery journal block I/O requests com?

pleted by the storage device.

bios page cache completed

The number of block map I/O requests completed by the

storage device.

bios acknowledged

The number of block I/O requests acknowledged by VDO.

bios acknowledged partial

The number of partial block I/O requests acknowledged by

VDO. Applies only to 512-byte emulation mode.

bios in progress

The number of bios submitted to the VDO which have not

yet been acknowledged.

There are five types of flags:

read   The number of non-write bios (bios without the REQ_WRITE

flag set)

write The number of write bios (bios with the REQ_WRITE flag

set)

discard

The number of bios with a REQ_DISCARD flag set

flush The number of flush bios (bios with the REQ_FLUSH flag

set)

fua   The number of "force unit access" bios (bios with the

REQ_FUA flag set)

Note that all bios will be counted as either read or write bios,

depending on the REQ_WRITE flag setting, regardless of whether

any of the other flags are set.

KVDO module bytes used

The current count of bytes allocated by the kernel VDO module.

KVDO module peak bytes used

The peak count of bytes allocated by the kernel VDO module,

since the module was loaded.

EXAMPLES

The following example shows sample output if no options are provided:

Device   1K-blocks Used   Available   Use% Space Saving%

/dev/mapper/my_vdo 1932562432 427698104 1504864328 22% 21%

With the --human-readable option, block counts are converted to conven?

tional units (1 KB = 1024 bytes):

Device   Size Used   Available Use% Space Saving%

/dev/mapper/my_vdo 1.8T   407.9G 1.4T   22%   21%

With the --si option as well, the block counts are reported using SI

units (1 KB = 1000 bytes):

Device   Size Used   Available Use%   Space Saving%

/dev/mapper/my_vdo 2.0T   438G   1.5T   22%   21%

NOTES

The output may be incomplete when the command is run by an unprivileged

user.

SEE ALSO

vdo(8).