

sysfs-block..txt

What: /sys/block/<disk>/stat
Date: February 2008
Contact: Jerome Marchand <jmarchan@redhat.com>
Description:

The /sys/block/<disk>/stat files displays the I/O statistics of disk <disk>. They contain 11 fields:
1 - reads completed successfully
2 - reads merged
3 - sectors read
4 - time spent reading (ms)
5 - writes completed
6 - writes merged
7 - sectors written
8 - time spent writing (ms)
9 - I/Os currently in progress
10 - time spent doing I/Os (ms)
11 - weighted time spent doing I/Os (ms)
For more details refer Documentation/iostats.txt

What: /sys/block/<disk>/<part>/stat
Date: February 2008
Contact: Jerome Marchand <jmarchan@redhat.com>
Description:

The /sys/block/<disk>/<part>/stat files display the I/O statistics of partition <part>. The format is the same as the above-written /sys/block/<disk>/stat format.

What: /sys/block/<disk>/integrity/format
Date: June 2008
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description:

Metadata format for integrity capable block device.
E. g. T10-DIF-TYPE1-CRC.

What: /sys/block/<disk>/integrity/read_verify
Date: June 2008
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description:

Indicates whether the block layer should verify the integrity of read requests serviced by devices that support sending integrity metadata.

What: /sys/block/<disk>/integrity/tag_size
Date: June 2008
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description:

Number of bytes of integrity tag space available per 512 bytes of data.

What: /sys/block/<disk>/integrity/write_generate

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Date: June 2008
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description: Indicates whether the block layer should automatically generate checksums for write requests bound for devices that support receiving integrity metadata.

What: /sys/block/<disk>/alignment_offset
Date: April 2009
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description: Storage devices may report a physical block size that is bigger than the logical block size (for instance a drive with 4KB physical sectors exposing 512-byte logical blocks to the operating system). This parameter indicates how many bytes the beginning of the device is offset from the disk's natural alignment.

What: /sys/block/<disk>/<partition>/alignment_offset
Date: April 2009
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description: Storage devices may report a physical block size that is bigger than the logical block size (for instance a drive with 4KB physical sectors exposing 512-byte logical blocks to the operating system). This parameter indicates how many bytes the beginning of the partition is offset from the disk's natural alignment.

What: /sys/block/<disk>/queue/logical_block_size
Date: May 2009
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description: This is the smallest unit the storage device can address. It is typically 512 bytes.

What: /sys/block/<disk>/queue/physical_block_size
Date: May 2009
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description: This is the smallest unit a physical storage device can write atomically. It is usually the same as the logical block size but may be bigger. One example is SATA drives with 4KB sectors that expose a 512-byte logical block size to the operating system. For stacked block devices the physical_block_size variable contains the maximum physical_block_size of the component devices.

What: /sys/block/<disk>/queue/minimum_io_size
Date: April 2009
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description: Storage devices may report a granularity or preferred minimum I/O size which is the smallest request the device can perform without incurring a performance penalty. For disk drives this is often the physical

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block size. For RAID arrays it is often the stripe chunk size. A properly aligned multiple of `minimum_io_size` is the preferred request size for workloads where a high number of I/O operations is desired.

What: `/sys/block/<disk>/queue/optimal_io_size`
Date: April 2009
Contact: Martin K. Petersen <martin.petersen@oracle.com>
Description:

Storage devices may report an optimal I/O size, which is the device's preferred unit for sustained I/O. This is rarely reported for disk drives. For RAID arrays it is usually the stripe width or the internal track size. A properly aligned multiple of `optimal_io_size` is the preferred request size for workloads where sustained throughput is desired. If no optimal I/O size is reported this file contains 0.

What: `/sys/block/<disk>/queue/nomerges`
Date: January 2010
Contact:
Description:

Standard I/O elevator operations include attempts to merge contiguous I/Os. For known random I/O loads these attempts will always fail and result in extra cycles being spent in the kernel. This allows one to turn off this behavior on one of two ways: When set to 1, complex merge checks are disabled, but the simple one-shot merges with the previous I/O request are enabled. When set to 2, all merge tries are disabled. The default value is 0 - which enables all types of merge tries.