Read-only

sudo fio --filename=/dev/sdb --rw=read --direct=1 --runtime=20 --numjobs=1 --time\_based --group\_reporting --name=seq\_read --ioengine=sync --iodepth\_batch=1 --bs=4k

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I/O depth vs data access size | 4k | 16k | 32k | 128k |
| 1 | 987 [4] | 2707 [6] | 3804 [8] | 5256 [22] |
| 16 | 1005 [3.6] | 2643 [6] | 3651 [8] | 5017 [22] |
| 128 | 989 [4] | 2621 [6] | 3689 [8] | 4907 [22] |
| 1024 | 947 [3.5] | 2207 [6] | 3655 [8] | 5008 [22] |

throughput in MB/s [latency time in usec (50th percentile)]

write-only  
sudo fio --filename=/dev/sdb --rw=write --direct=1 --runtime=20 --numjobs=1 --time\_based --group\_reporting --name=seq\_write --ioengine=sync --bs=32k --iodepth\_batch=1 --bs=4k

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I/O depth vs data access size | 4k | 16k | 32k | 128k |
| 1 | 517 [5] | 724[9] | 778 [15] | 871 [50] |
| 16 | 506 [5] | 706 [9] | 791 [15] | 843 [49] |
| 128 | 495 [5] | 707 [9] | 791 [15] | 802 [50] |
| 1024 | 504 [5] | 686 [10] | 777 [15] | 860 [49] |

throughput in MB/s [latency time in usec (50th percentile)]

50:50 read-write

(default for --rw=randrw is 50% read and 50% write)

sudo fio --filename=/dev/sdb --rw=randrw --direct=1 --runtime=20 --numjobs=1 --time\_based --group\_reporting --name=50\_50\_random\_read\_and\_write --ioengine=sync --iodepth\_batch=1 --bs=4k

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I/O depth vs data access size | 4k | 16k | 32k | 128 |
| 1 | 82 [6]  82 [7] | 256 [8]  256 [12] | 363 [10]  364 [17] | 496 [28]  493 [50] |
| 16 | 85 [6]  85 [7] | 252 [8]  252 [12] | 342 [11]  342 [17] | 468 [28]  464 [50] |
| 128 | 82.7 [6]  82.6 [7] | 237 [8]  237 [12] | 352 [10]  352 [17] | 491 [28]  487 [50] |
| 1024 | 75.6 [6]  75.5 [7] | 238 [8]  238 [12] | 260 [11]  260 [18] | 396 [30]  395 [52] |

Read throughput in MB/s [latency time in usec (50th percentile)]

Write throughput in MB/s [latency time in usec (50th percentile)]

70:30 read-write

(--rwmixread=30 would mean that 30% of the I/O will be reads and 70% will be writes)

sudo fio --filename=/dev/sdb --rw=randrw --direct=1 --runtime=20 --numjobs=1 --time\_based --group\_reporting --name=70\_30\_random\_read\_and\_write --rwmixread=70 --ioengine=sync --iodepth\_batch=1 --bs=4k

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I/O depth vs data access size | 4k | 16k | 32k | 128 |
| 1 | 160 [5]  69 [7] | 449 [8]  193 [12] | 688 [10]  295 [17] | 956 [27]  409 [50] |
| 16 | 162 [5]  69 [7] | 448 [8]  192 [12] | 702 [10]  301 [17] | 959 [26]  410 [50] |
| 128 | 139 [6]  60 [8] | 371 [8]  159 [12] | 628 [10]  270 [17] | 837 [26]  358 [50] |
| 1024 | 143 [6]  62 [7] | 285 [8]  122 [13] | 370 [12]  159 [19] | 923 [27]  395 [50] |

Read throughput in MB/s [latency time in usec (50th percentile)]

Write throughput in MB/s [latency time in usec (50th percentile)]

Note: in the 99.5th and higher percentile, we see latency for read operation increase to 1,000 usec at max, but for write latency, latency increases up to 140,000 usec at max