**混合读写**

[root@1g-iops /]# fio -filename=/dev/vdb1 -direct=1 -iodepth 1 -thread -rw=randrw -rwmixread=70 -ioengine=psync -bs=4k -size=200G -numjobs=30 -runtime=1000 -group\_reporting -name=mytest1

mytest1: (g=0): rw=randrw, bs=4K-4K/4K-4K/4K-4K, ioengine=psync, iodepth=1

...

fio-2.2.5

Starting 30 threads

Jobs: 17 (f=17): [\_(2),m(4),\_(2),m(5),\_(2),m(1),\_(1),m(1),\_(1),m(1),\_(2),m(1),\_(2),m(4),\_(1)] [7.1% done] [3980KB/1722KB/0KB /s] [995/430/0 iops] [eta 03h:36m:39s]

mytest1: (groupid=0, jobs=30): err= 0: pid=18785: Mon Jul 11 09:30:56 2016

read : io=1160.8MB, bw=1188.3KB/s, iops=297, runt=1000259msec

clat (usec): min=47, max=1614.1K, avg=626.11, stdev=8368.93

lat (usec): min=47, max=1614.1K, avg=626.47, stdev=8368.94

clat percentiles (usec):

| 1.00th=[ 64], 5.00th=[ 78], 10.00th=[ 97], 20.00th=[ 141],

| 30.00th=[ 221], 40.00th=[ 426], 50.00th=[ 516], 60.00th=[ 612],

| 70.00th=[ 708], 80.00th=[ 820], 90.00th=[ 988], 95.00th=[ 1144],

| 99.00th=[ 1544], 99.50th=[ 1896], 99.90th=[ 4048], 99.95th=[ 6368],

| 99.99th=[370688]

bw (KB /s): min= 0, max= 887, per=4.37%, avg=51.93, stdev=65.15

write: io=508004KB, bw=520061B/s, iops=126, runt=1000259msec

clat (msec): min=1, max=6872, avg=234.75, stdev=405.17

lat (msec): min=1, max=6872, avg=234.75, stdev=405.17

clat percentiles (msec):

| 1.00th=[ 4], 5.00th=[ 5], 10.00th=[ 6], 20.00th=[ 7],

| 30.00th=[ 9], 40.00th=[ 12], 50.00th=[ 24], 60.00th=[ 123],

| 70.00th=[ 255], 80.00th=[ 424], 90.00th=[ 709], 95.00th=[ 963],

| 99.00th=[ 1778], 99.50th=[ 2245], 99.90th=[ 3916], 99.95th=[ 4621],

| 99.99th=[ 5538]

bw (KB /s): min= 0, max= 316, per=3.89%, avg=19.72, stdev=24.13

lat (usec) : 50=0.01%, 100=7.38%, 250=14.99%, 500=11.74%, 750=17.71%

lat (usec) : 1000=11.49%

lat (msec) : 2=6.44%, 4=0.99%, 10=10.34%, 20=3.44%, 50=2.25%

lat (msec) : 100=0.94%, 250=2.87%, 500=4.41%, 750=2.37%, 1000=1.28%

lat (msec) : 2000=1.17%, >=2000=0.20%

cpu : usr=0.01%, sys=0.04%, ctx=424344, majf=0, minf=8

IO depths : 1=100.0%, 2=0.0%, 4=0.0%, 8=0.0%, 16=0.0%, 32=0.0%, >=64=0.0%

submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

issued : total=r=297150/w=127001/d=0, short=r=0/w=0/d=0, drop=r=0/w=0/d=0

latency : target=0, window=0, percentile=100.00%, depth=1

Run status group 0 (all jobs):

READ: io=1160.8MB, aggrb=1188KB/s, minb=1188KB/s, maxb=1188KB/s, mint=1000259msec, maxt=1000259msec

WRITE: io=508004KB, aggrb=507KB/s, minb=507KB/s, maxb=507KB/s, mint=1000259msec, maxt=1000259msec

Disk stats (read/write):

vdb: ios=297228/131467, merge=0/172, ticks=179705/31346109, in\_queue=31538299, util=100.00%

[root@1g-iops /]# fio -filename=/dev/vdb1 -direct=1 -iodepth 1 -thread -rw=randrw -rwmixread=70 -ioengine=psync -bs=8k -size=200G -numjobs=30 -runtime=1000 -group\_reporting -name=mytest1

mytest1: (g=0): rw=randrw, bs=8K-8K/8K-8K/8K-8K, ioengine=psync, iodepth=1

...

fio-2.2.5

Starting 30 threads

Jobs: 26 (f=26): [\_(1),m(2),\_(1),m(17),\_(1),m(3),\_(1),m(4)] [20.0% done] [1400KB/552KB/0KB /s] [175/69/0 iops] [eta 01h:06m:39s]

mytest1: (groupid=0, jobs=30): err= 0: pid=18822: Mon Jul 11 09:49:00 2016

read : io=5530.5MB, bw=5659.2KB/s, iops=707, runt=1000561msec

clat (usec): min=50, max=3313.3K, avg=758.77, stdev=10717.22

lat (usec): min=50, max=3313.3K, avg=759.04, stdev=10717.23

clat percentiles (usec):

| 1.00th=[ 86], 5.00th=[ 370], 10.00th=[ 410], 20.00th=[ 446],

| 30.00th=[ 478], 40.00th=[ 516], 50.00th=[ 572], 60.00th=[ 652],

| 70.00th=[ 732], 80.00th=[ 820], 90.00th=[ 980], 95.00th=[ 1176],

| 99.00th=[ 1928], 99.50th=[ 2992], 99.90th=[ 6304], 99.95th=[16512],

| 99.99th=[207872]

bw (KB /s): min= 1, max= 2603, per=5.64%, avg=318.99, stdev=393.52

write: io=2388.1MB, bw=2444.1KB/s, iops=305, runt=1000561msec

clat (msec): min=1, max=6012, avg=96.38, stdev=322.67

lat (msec): min=1, max=6012, avg=96.38, stdev=322.67

clat percentiles (msec):

| 1.00th=[ 4], 5.00th=[ 5], 10.00th=[ 5], 20.00th=[ 6],

| 30.00th=[ 8], 40.00th=[ 9], 50.00th=[ 11], 60.00th=[ 16],

| 70.00th=[ 24], 80.00th=[ 39], 90.00th=[ 159], 95.00th=[ 553],

| 99.00th=[ 1778], 99.50th=[ 2212], 99.90th=[ 3163], 99.95th=[ 3589],

| 99.99th=[ 5211]

bw (KB /s): min= 1, max= 960, per=5.20%, avg=127.02, stdev=160.13

lat (usec) : 100=1.23%, 250=1.73%, 500=22.37%, 750=25.18%, 1000=12.86%

lat (msec) : 2=5.82%, 4=1.74%, 10=13.68%, 20=5.35%, 50=4.89%

lat (msec) : 100=1.46%, 250=1.29%, 500=0.77%, 750=0.48%, 1000=0.30%

lat (msec) : 2000=0.62%, >=2000=0.22%

cpu : usr=0.02%, sys=0.07%, ctx=1013863, majf=0, minf=9

IO depths : 1=100.0%, 2=0.0%, 4=0.0%, 8=0.0%, 16=0.0%, 32=0.0%, >=64=0.0%

submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

issued : total=r=707895/w=305782/d=0, short=r=0/w=0/d=0, drop=r=0/w=0/d=0

latency : target=0, window=0, percentile=100.00%, depth=1

Run status group 0 (all jobs):

READ: io=5530.5MB, aggrb=5659KB/s, minb=5659KB/s, maxb=5659KB/s, mint=1000561msec, maxt=1000561msec

WRITE: io=2388.1MB, aggrb=2444KB/s, minb=2444KB/s, maxb=2444KB/s, mint=1000561msec, maxt=1000561msec

Disk stats (read/write):

vdb: ios=707934/309582, merge=0/166, ticks=524142/31466800, in\_queue=32027355, util=100.00%

[root@1g-iops /]#

[root@1g-iops /]# fio -filename=/dev/vdb1 -direct=1 -iodepth 1 -thread -rw=randrw -rwmixread=70 -ioengine=psync -bs=16k -size=200G -numjobs=30 -runtime=1000 -group\_reporting -name=mytest1

mytest1: (g=0): rw=randrw, bs=16K-16K/16K-16K/16K-16K, ioengine=psync, iodepth=1

...

fio-2.2.5

Starting 30 threads

Jobs: 18 (f=18): [\_(2),m(1),\_(2),m(2),\_(1),m(5),\_(1),m(3),\_(1),m(1),\_(1),m(1),\_(1),m(3),\_(2),m(1),\_(1),m(1)] [7.7% done] [3212KB/1662KB/0KB /s] [200/1Jobs: 18 (f=18): [\_(2),m(1),\_(2),m(2),\_(1),m(5),\_(1),m(3),\_(1),m(1),\_(1),m(1),\_(1),m(3),\_(2),m(1),\_(1),m(1)] [7.7% done] [0KB/0KB/0KB /s] [0/0/0 iops] [eta 03h:19m:58s]

mytest1: (groupid=0, jobs=30): err= 0: pid=18858: Mon Jul 11 10:14:39 2016

read : io=6745.1MB, bw=6898.4KB/s, iops=431, runt=1001379msec

clat (usec): min=63, max=3574.1K, avg=906.91, stdev=11607.67

lat (usec): min=63, max=3574.1K, avg=907.20, stdev=11607.68

clat percentiles (usec):

| 1.00th=[ 390], 5.00th=[ 426], 10.00th=[ 450], 20.00th=[ 486],

| 30.00th=[ 524], 40.00th=[ 572], 50.00th=[ 652], 60.00th=[ 780],

| 70.00th=[ 900], 80.00th=[ 1048], 90.00th=[ 1288], 95.00th=[ 1528],

| 99.00th=[ 2384], 99.50th=[ 3408], 99.90th=[ 7264], 99.95th=[18816],

| 99.99th=[203776]

bw (KB /s): min= 2, max= 5489, per=6.98%, avg=481.42, stdev=690.72

write: io=2854.8MB, bw=2919.3KB/s, iops=182, runt=1001379msec

clat (msec): min=1, max=7300, avg=162.17, stdev=529.07

lat (msec): min=1, max=7301, avg=162.18, stdev=529.07

clat percentiles (msec):

| 1.00th=[ 4], 5.00th=[ 5], 10.00th=[ 5], 20.00th=[ 6],

| 30.00th=[ 8], 40.00th=[ 9], 50.00th=[ 10], 60.00th=[ 14],

| 70.00th=[ 24], 80.00th=[ 57], 90.00th=[ 351], 95.00th=[ 1029],

| 99.00th=[ 2835], 99.50th=[ 3720], 99.90th=[ 5211], 99.95th=[ 5800],

| 99.99th=[ 6783]

bw (KB /s): min= 2, max= 1631, per=6.24%, avg=182.04, stdev=273.92

lat (usec) : 100=0.05%, 250=0.10%, 500=16.69%, 750=23.74%, 1000=13.90%

lat (msec) : 2=14.62%, 4=1.98%, 10=14.58%, 20=4.67%, 50=3.41%

lat (msec) : 100=1.36%, 250=1.49%, 500=0.88%, 750=0.59%, 1000=0.41%

lat (msec) : 2000=0.96%, >=2000=0.58%

cpu : usr=0.01%, sys=0.05%, ctx=614618, majf=0, minf=15

IO depths : 1=100.0%, 2=0.0%, 4=0.0%, 8=0.0%, 16=0.0%, 32=0.0%, >=64=0.0%

submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

issued : total=r=431738/w=182704/d=0, short=r=0/w=0/d=0, drop=r=0/w=0/d=0

latency : target=0, window=0, percentile=100.00%, depth=1

Run status group 0 (all jobs):

READ: io=6745.1MB, aggrb=6898KB/s, minb=6898KB/s, maxb=6898KB/s, mint=1001379msec, maxt=1001379msec

WRITE: io=2854.8MB, aggrb=2919KB/s, minb=2919KB/s, maxb=2919KB/s, mint=1001379msec, maxt=1001379msec

Disk stats (read/write):

vdb: ios=431777/185477, merge=0/144, ticks=382660/32414258, in\_queue=32852743, util=100.00%

[root@1g-iops /]#

**随机读：**

[root@1g-iops ~]# fio -filename=/dev/vdb1 -direct=1 -iodepth 1 -thread -rw=randread -ioengine=psync -bs=4k -size=200G -numjobs=10 -runtime=1000 -group\_reporting -name=mytest

mytest: (g=0): rw=randread, bs=4K-4K/4K-4K/4K-4K, ioengine=psync, iodepth=1

...

fio-2.2.5

Starting 10 threads

Jobs: 10 (f=10): [r(10)] [100.0% done] [46628KB/0KB/0KB /s] [11.7K/0/0 iops] [eta 00m:00s]

mytest: (groupid=0, jobs=10): err= 0: pid=19306: Tue Jul 12 00:51:50 2016

read : io=34884MB, bw=35721KB/s, iops=8930, runt=1000006msec

clat (usec): min=50, max=1688.4K, avg=1109.84, stdev=6235.04

lat (usec): min=50, max=1688.4K, avg=1110.07, stdev=6235.04

clat percentiles (usec):

| 1.00th=[ 342], 5.00th=[ 366], 10.00th=[ 382], 20.00th=[ 402],

| 30.00th=[ 422], 40.00th=[ 446], 50.00th=[ 478], 60.00th=[ 556],

| 70.00th=[ 660], 80.00th=[ 732], 90.00th=[ 868], 95.00th=[ 1928],

| 99.00th=[16192], 99.50th=[23424], 99.90th=[46336], 99.95th=[70144],

| 99.99th=[222208]

bw (KB /s): min= 0, max= 6840, per=10.23%, avg=3654.45, stdev=1476.22

lat (usec) : 100=0.12%, 250=0.11%, 500=54.05%, 750=27.95%, 1000=10.40%

lat (msec) : 2=2.46%, 4=1.48%, 10=1.67%, 20=1.08%, 50=0.59%

lat (msec) : 100=0.05%, 250=0.03%, 500=0.01%, 750=0.01%, 1000=0.01%

lat (msec) : 2000=0.01%

cpu : usr=0.58%, sys=1.58%, ctx=8938999, majf=0, minf=21

IO depths : 1=100.0%, 2=0.0%, 4=0.0%, 8=0.0%, 16=0.0%, 32=0.0%, >=64=0.0%

submit : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

complete : 0=0.0%, 4=100.0%, 8=0.0%, 16=0.0%, 32=0.0%, 64=0.0%, >=64=0.0%

issued : total=r=8930358/w=0/d=0, short=r=0/w=0/d=0, drop=r=0/w=0/d=0

latency : target=0, window=0, percentile=100.00%, depth=1

Run status group 0 (all jobs):

READ: io=34884MB, aggrb=35721KB/s, minb=35721KB/s, maxb=35721KB/s, mint=1000006msec, maxt=1000006msec

Disk stats (read/write):

vdb: ios=9710536/4405, merge=0/50, ticks=12872775/4913774, in\_queue=17793691, util=99.81%

[root@1g-iops ~]#