Comparitive Performance Report for cbt-17thDec-main-4k vs cbt-20thDec-alexls12-4k vs cbt-24thDec-squid1920-4k

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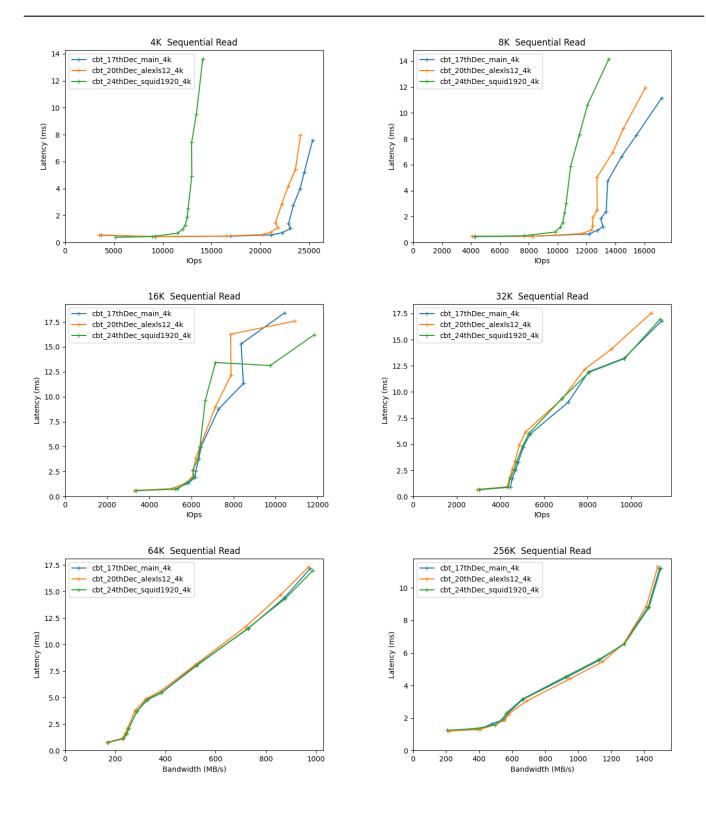
Comparison summary for cbt-17thDec-main-4k vs cbt-20thDec-alexls12-4k vs cbt-24thDec-squid1920-4k

Sequential Read	cbt_17thDec_main_4k	cbt_20thDec_alexls12_4k	cbt_24thDec_squid1920_4k
4K	25339 IOps@7.6ms	24109 IOps@8.0ms	14096 IOps@13.6ms
8K	17196 IOps@11.2ms	16069 IOps@11.9ms	13542 IOps@14.2ms
16K	10428 IOps@18.4ms	10917 IOps@17.6ms	$11838 \; \mathrm{IOps@16.2ms}$
32K	11409 IOps@16.8ms	10925 IOps@17.6ms	11321 IOps@17.0ms
64K	977 MB/s@17.2ms	970 MB/s@17.3ms	988 MB/s@17.0 ms
256K	1495 MB/s@11.2ms	1482 MB/s@11.3 ms	1499 MB/s@11.2 ms
512K	1501 MB/s@11.2ms	1502 MB/s@11.2ms	1510 MB/s@11.1ms
1024K	1533 MB/s@13.7ms	1527 MB/s@13.7ms	1534 MB/s@13.7ms
Sequential Write	cbt_17thDec_main_4k	cbt 20thDec alexls12 4k	cbt_24thDec_squid1920_4k
4K			
8K	2024 IOps@126.4ms 2019 IOps@126.6ms	3764 IOps@68.0ms 3599 IOps@71.1ms	2289 IOps@111.7ms 2168 IOps@118.0ms
16K	5117 IOps@37.5ms	4895 IOps@39.2ms	5314 IOps@36.1ms
32K	3621 IOps@35.3ms	5601 IOps@22.8ms	6173 IOps@20.7ms
64K	196 MB/s@42.8ms	200 MB/s@42.0ms	207 MB/s@40.6ms
			359 MB/s@5.8ms
	400 MR/s@31 3ms	51 / WB / SUX Hms	
256K	400 MB/s@31.3ms 439 MB/s@28 5ms	517 MB/s@8.0ms	
256K 512K 1024K	400 MB/s@31.3ms 439 MB/s@28.5ms 472 MB/s@26.3ms	517 MB/s@8.0ms 432 MB/s@29.0ms 505 MB/s@28.7ms	444 MB/s@28.2ms 479 MB/s@43.5ms
256K 512K 1024K	439 MB/s@28.5 ms	432 MB/s@29.0 ms	444 MB/s@28.2ms
256K 512K 1024K Random Read	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k
256K 512K 1024K Random Read 4K	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms
256K 512K 1024K Random Read 4K 8K	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms
256K 512K 1024K Random Read 4K 8K 16K	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms
256K 512K 1024K Random Read 4K 8K 16K 32K	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms	432 MB/s@29.0ms 505 MB/s@28.7ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms
256K 512K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K 1024K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms 1698 MB/s@19.8ms 1709 MB/s@19.6ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms 1703 MB/s@19.7ms 1708 MB/s@19.6ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K 1024K	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms 1698 MB/s@19.8ms 1709 MB/s@19.6ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms 1703 MB/s@19.7ms 1708 MB/s@19.6ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K 1024K	439 MB/s@28.5ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms 1698 MB/s@19.8ms 1709 MB/s@19.6ms cbt_17thDec_main_4k 2897 IOps@44.2ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms cbt_20thDec_alexls12_4k 5072 IOps@25.2ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms 1703 MB/s@19.7ms 1708 MB/s@19.6ms cbt_24thDec_squid1920_4k 2970 IOps@43.1ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K 1024K Random Write 4K 8K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms 1698 MB/s@19.8ms 1709 MB/s@19.6ms cbt_17thDec_main_4k 2897 IOps@44.2ms 2791 IOps@45.9ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms cbt_20thDec_alexls12_4k 5072 IOps@25.2ms 4734 IOps@27.0ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms 1703 MB/s@19.7ms 1708 MB/s@19.6ms cbt_24thDec_squid1920_4k 2970 IOps@43.1ms 2634 IOps@48.6ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K 1024K Random Write 4K 8K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms 1698 MB/s@19.8ms 1709 MB/s@19.6ms cbt_17thDec_main_4k 2897 IOps@44.2ms 2791 IOps@45.9ms 5726 IOps@22.3ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms cbt_20thDec_alexls12_4k 5072 IOps@25.2ms 4734 IOps@27.0ms 4757 IOps@26.9ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms 1703 MB/s@19.7ms 1708 MB/s@19.6ms cbt_24thDec_squid1920_4k 2970 IOps@43.1ms 2634 IOps@48.6ms 5279 IOps@24.2ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K 1024K Random Write 4K 8K 16K 32K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@10.2ms 1680 MB/s@19.6ms 1698 MB/s@19.6ms cbt_17thDec_main_4k 2897 IOps@44.2ms 2791 IOps@45.9ms 5726 IOps@22.3ms 3245 IOps@39.4ms	432 MB/s@29.0ms 505 MB/s@28.7ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms cbt_20thDec_alexls12_4k 5072 IOps@25.2ms 4734 IOps@27.0ms 4757 IOps@26.9ms 3674 IOps@34.8ms	444 MB/s@28.2ms 479 MB/s@43.5ms 2010 MB/s@43.5ms 2010 MB/s@43.5ms 2010 MB/s@11.0ms 2011 MB/s@11.0ms 2011 MB/s@10.4ms 2010 MB/s@10.4ms 2010 MB/s@19.9ms 2010 MB/s@19.7ms 2010 MB/s@19.6ms 2010 MB/s@19.6ms 2010 MB/s@19.6ms 2010 MB/s@19.6ms
256K 512K 1024K Random Read 4K 8K 16K 32K 64K 256K 512K	439 MB/s@28.5ms 472 MB/s@26.3ms 472 MB/s@26.3ms cbt_17thDec_main_4k 95501 IOps@4.0ms 60546 IOps@6.3ms 34618 IOps@11.1ms 31326 IOps@4.1ms 1642 MB/s@10.2ms 1680 MB/s@20.0ms 1698 MB/s@19.8ms 1709 MB/s@19.6ms cbt_17thDec_main_4k 2897 IOps@44.2ms 2791 IOps@45.9ms 5726 IOps@22.3ms	432 MB/s@29.0ms 505 MB/s@28.7ms cbt_20thDec_alexls12_4k 94377 IOps@4.1ms 59367 IOps@6.5ms 33414 IOps@7.7ms 30473 IOps@4.2ms 1623 MB/s@10.3ms 1694 MB/s@19.8ms 1699 MB/s@19.8ms 1707 MB/s@19.7ms cbt_20thDec_alexls12_4k 5072 IOps@25.2ms 4734 IOps@27.0ms 4757 IOps@26.9ms	444 MB/s@28.2ms 479 MB/s@43.5ms cbt_24thDec_squid1920_4k 34521 IOps@7.4ms 34758 IOps@11.0ms 35946 IOps@7.1ms 31867 IOps@8.0ms 1607 MB/s@10.4ms 1688 MB/s@19.9ms 1703 MB/s@19.7ms 1708 MB/s@19.6ms cbt_24thDec_squid1920_4k 2970 IOps@43.1ms 2634 IOps@48.6ms 5279 IOps@24.2ms

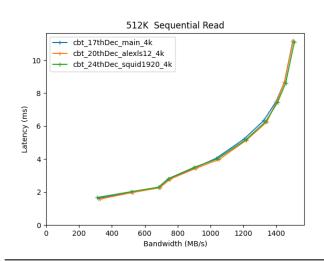
Random Write	cbt_17thDec_main_4k	$cbt_20thDec_alexls12_4k$	cbt_24thDec_squid1920_4l
512K	464 MB/s@72.2ms	472 MB/s@70.9ms	471 MB/s@71.1ms
1024K	472 MB/s@35.2ms	517 MB/s@32.1ms	488 MB/s@68.4ms
Random Read/Write	cbt_17thDec_main_4k	cbt_20thDec_alexls12_4k	cbt_24thDec_squid1920_4k
16K_70/30	6191 IOps@20.7ms	6580 IOps@9.7ms	6920 IOps@18.5ms
64K_70/30	288 MB/s@29.2ms	275 MB/s@30.5ms	292 MB/s@14.4ms
64K_30/70	166 MB/s@12.6ms	191 MB/s@43.8ms	214 MB/s@39.2ms

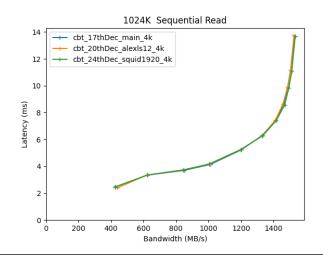
Response Curves

Sequential Read

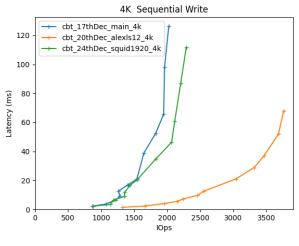


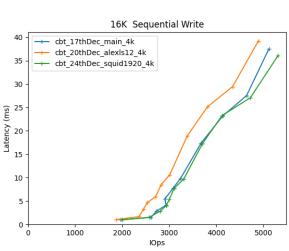
Response Curves Sequential Write

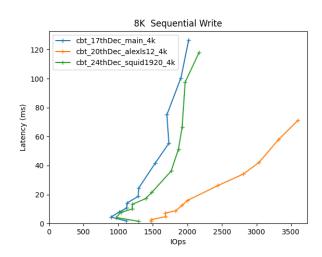


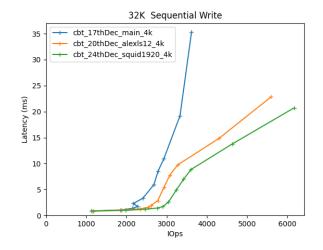


Sequential Write

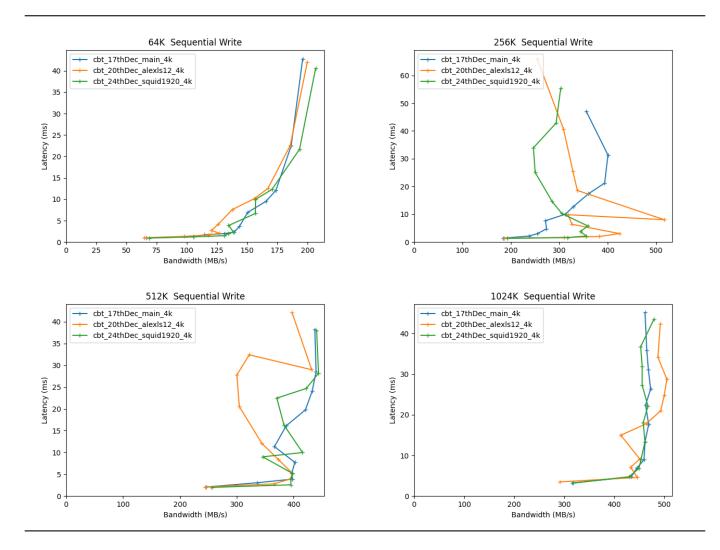




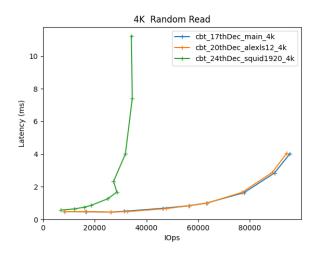


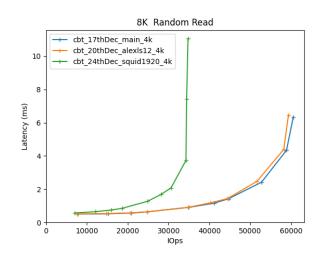


Response Curves Random Read

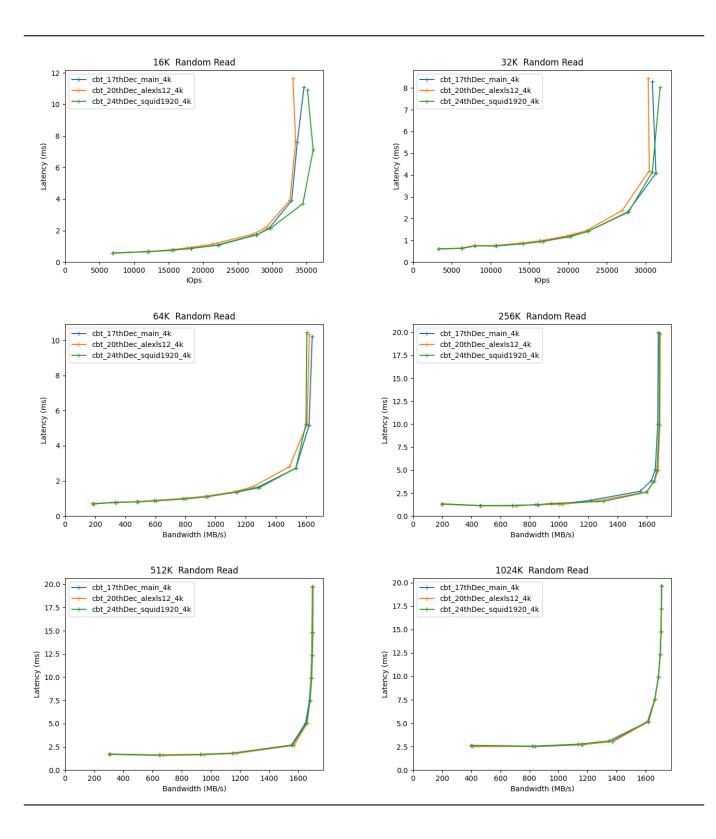


Random Read



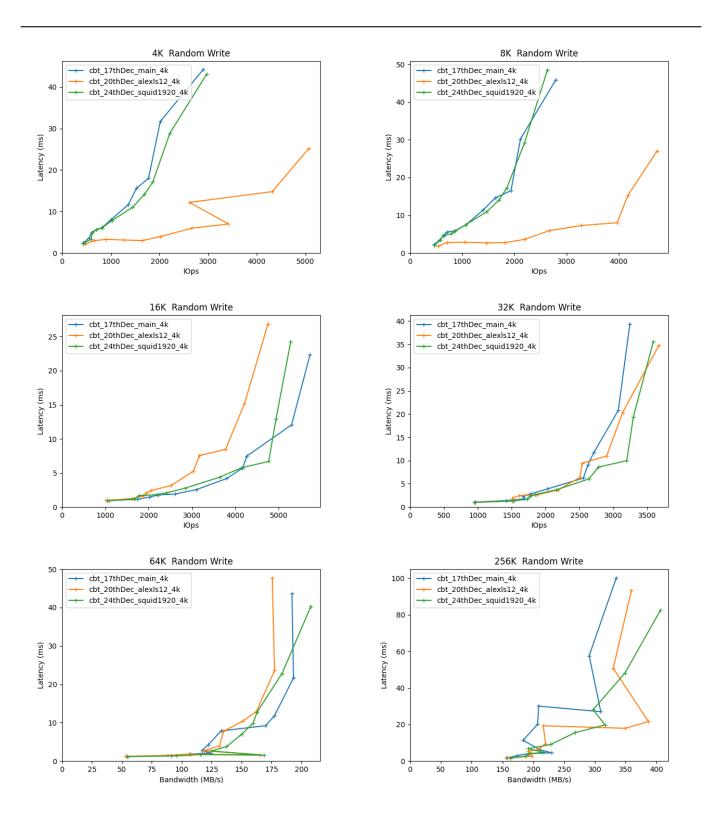


Response Curves Random Write

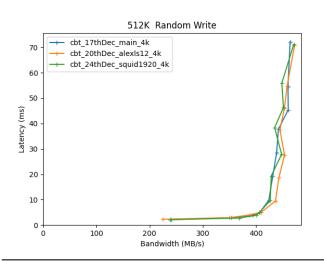


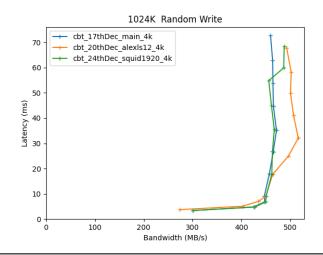
Random Write

Response Curves Random Write

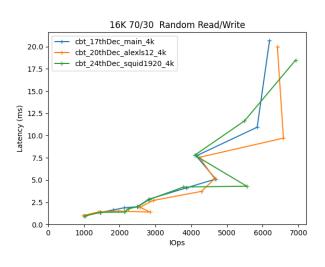


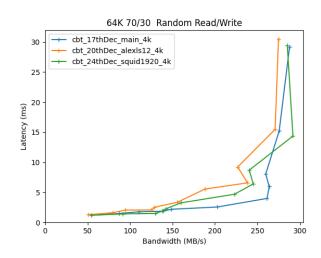
Response Curves Random Read/Write

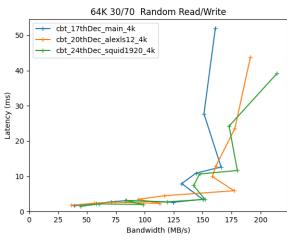




Random Read/Write







Configuration yaml files

results

```
librbdfio:
  cmd_path: /usr/local/bin/fio
  fio_out_format: json
  log_avg_msec: 100
  log_bw: true
  log_iops: true
  log_lat: true
 norandommap: true
  osd_ra:
  - 4096
  poolname: rbd_replicated
 precond_time: 600
 prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  time: 60
  time_based: true
  use_existing_volumes: true
  vol_size: 420000
  volumes_per_client:
  - 1
  workloads:
    16k7030:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
```

```
- 1
  - 1
  - 1
 op_size: 16384
 rwmixread: 70
16krandomread:
  iodepth:
  - 4
  - 8
  - 12
  - 16
  - 24
  - 48
 - 64
 - 128
  - 256
  - 384
  jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 16384
16krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 16384
1Mrandomread:
  iodepth:
```

- 2 - 3 - 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 1048576 1Mrandomwrite: iodepth: - 1 - 2 - 3 - 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 1048576 1Mseqread: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 10 - 12

```
- 14
  - 16
  - 20
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 1048576
1Mseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
  - 20
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 1048576
256krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
 jobname: randread
 mode: randread
 numjobs:
  - 1
```

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 262144 256krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 262144 32krandomread: iodepth: - 2 - 4 - 6 - 8 - 12 - 16 - 24 - 32 - 64 - 128 - 256 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1

- 1 - 1 - 1 op_size: 32768 32krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 4krandomread: iodepth: - 4 - 8 - 12 - 16 - 32 - 48 - 64 - 128 - 256 - 384 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 ${\tt 4krandomwrite:}$ iodepth: - 1

- 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 512krandomread: iodepth: - 1 - 2 - 3 - 4 - 8 - 16 - 24 - 32 - 40 - 48 - 64 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 ${\tt 512krandomwrite:}\\$ iodepth: - 1 - 2 - 3 - 4 - 8 - 16 - 24 - 32

```
- 48
  - 64
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 524288
512kseqread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
  jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 524288
512kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
 - 12
  - 16
  - 20
  - 24
 - 32
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
```

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 64k3070: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randmix mode: randrw numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 rwmixread: 30 64k7030: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randmix mode: randrw numjobs: - 1 - 1 - 1 - 1 - 1 - 1

- 1 - 1 - 1 op_size: 65536 rwmixread: 70 64krandomread: iodepth: - 2 - 4 - 6 - 8 - 12 - 16 - 24 - 32 - 64 - 128 - 256 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64kseqread:

iodepth:

- 2 - 4 - 6 - 8 - 16 - 24 - 32 - 64 - 128 - 192 - 256 jobname: read mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64kseqwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: write mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 8krandomread: iodepth: - 4 - 8 - 12 - 16 - 32 - 48 - 64

```
- 128
  - 256
  - 384
  jobname: randread
  mode: randread
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 8192
{\tt 8krandomwrite:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 8192
precondition:
  iodepth:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
  - 1
  op_size: 65536
  precond: true
seq16kread:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
```

```
- 24
  - 32
  - 64
 - 96
 - 128
 - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 16384
seq16kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
 - 64
 - 96
  - 128
 - 192
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
 op_size: 16384
seq256kread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 48
  - 64
  jobname: seqread
```

```
mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 262144
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 5
  - 8
  - 12
 - 16
  - 24
  - 32
  - 48
  - 64
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 262144
seq32kread:
 iodepth:
  - 2
  - 4
 - 8
  - 12
  - 16
  - 24
 - 32
 - 64
 - 96
 - 128
 - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
 - 1
  - 1
```

- 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 seq32kwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 seq4kread: iodepth: - 2 - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96 - 128 - 192 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1

op_size: 4096

```
seq4kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
 - 24
 - 32
  - 64
 - 96
 - 128
 - 192
  - 256
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 4096
seq8kread:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
 - 32
  - 64
  - 96
 - 128
  - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
 op_size: 8192
seq8kwrite:
 iodepth:
 - 2
  - 4
```

```
- 12
        - 16
        - 24
        - 32
        - 64
        - 96
        - 128
        - 192
        - 256
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        op_size: 8192
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  head: --- server1 ---
  iterations: 1
  mgrs:
   --- server1 ---:
     a: null
  mkfs_opts: -f -i size=2048
  mons:
    --- server1 ---:
      a: --- IP Address --:6789
  mount_opts: -o inode64,noatime,logbsize=256k
  osds:
  - --- server1 ---
  osds_per_node: 6
  pdsh_ssh_args: -a -x -l%u %h
  rados_cmd: /usr/bin/rados
  rbd_cmd: /usr/bin/rbd
  tmp_dir: /tmp/cbt
  use_existing: true
  user: root
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```

results

```
librbdfio:
  cmd_path: /usr/local/bin/fio
  fio_out_format: json
  log_avg_msec: 100
  log_bw: true
  log_iops: true
  log_lat: true
  norandommap: true
  osd_ra:
  - 4096
 poolname: rbd_replicated
 precond_time: 600
 prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  time: 60
  time_based: true
  use_existing_volumes: true
  vol_size: 420000
  volumes_per_client:
  - 1
  workloads:
    16k7030:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      op size: 16384
      rwmixread: 70
    16krandomread:
      iodepth:
      - 4
      - 8
      - 12
      - 16
      - 24
```

- 48 - 64 - 128 - 256 - 384 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 16krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 1Mrandomread: iodepth: - 1 - 2 - 3 - 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 jobname: randread mode: randread

cbt-17th Dec-main-4k vs cbt-20th Dec-alexls
12-4k vs cbt-224 Dec-squid 1920-4k

```
numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  op_size: 1048576
1Mrandomwrite:
  iodepth:
 - 1
  - 2
  - 3
  - 4
  - 8
  - 12
  - 16
 - 20
  - 24
  - 28
  - 32
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 1048576
1Mseqread:
 iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 10
  - 12
 - 14
 - 16
 - 20
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
```

- 1 - 1 - 1 - 1 - 1 op_size: 1048576 1Mseqwrite: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 10 - 12 - 14 - 16 - 20 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 1048576 256krandomread: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 262144

256krandomwrite:

cbt-17thDec-main-4k vs cbt-20thDec-alexls12-4k vs cbt-2**3t**hDec-squid1920-4k

```
iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 262144
32krandomread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
 - 32
 - 64
 - 128
  - 256
 jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 32768
32krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
```

- 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 ${\tt 4krandomread:}$ iodepth: - 4 - 8 - 12 - 16 - 32 - 48 - 64 - 128 - 256 - 384 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 4krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs:

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 512krandomread: iodepth: - 1 - 2 - 3 - 4 - 8 - 16 - 24 - 32 - 40 - 48 - 64 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 ${\tt 512krandomwrite:}\\$ iodepth: - 1 - 2 - 3 - 4 - 8 - 16 - 24 - 32 - 40 - 48 - 64 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1

- 1 - 1 - 1 - 1 op_size: 524288 512kseqread: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 12 - 16 - 20 - 24 - 32 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 512kseqwrite: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 12 - 16 - 20 - 24 - 32 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 64k3070:

iodepth:

- 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randmix mode: randrw numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 rwmixread: 30 64k7030: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randmix mode: randrw numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 rwmixread: 70 64krandomread: iodepth: - 2 - 4 - 6 - 8 - 12

- 16 - 24 - 32 - 64 - 128 - 256 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64 krandom write:iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64kseqread: iodepth: - 2 - 4 - 6 - 8 - 16 - 24 - 32 - 64 - 128 - 192 - 256 jobname: read

```
mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: write
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 65536
8krandomread:
 iodepth:
 - 4
 - 8
  - 12
  - 16
  - 32
  - 48
 - 64
 - 128
 - 256
 - 384
  jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
```

- 1 - 1 - 1 - 1 - 1 op_size: 8192 ${\tt 8krandomwrite:}$ iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 8192 precondition: iodepth: - 4 jobname: precond1rw mode: randwrite monitor: false numjobs: - 1 op_size: 65536 precond: true seq16kread: iodepth: - 2 - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96 - 128 - 192 jobname: seqread mode: read numjobs: - 1 - 1 - 1

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 seq16kwrite: iodepth: - 2 - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96 - 128 - 192 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 seq256kread: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 48 - 64 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1

```
- 1
  op_size: 262144
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 5
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 262144
{\tt seq32kread:}
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  jobname: seqread
  mode: read
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
seq32kwrite:
  iodepth:
  - 1
  - 2
```

- 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 seq4kread: iodepth: - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96 - 128 - 192 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 seq4kwrite: $\verb"iodepth":$ - 2 - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96

```
- 192
  - 256
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 4096
{\tt seq8kread:}
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  jobname: seqread
  mode: read
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 8192
seq8kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  - 256
  jobname: seqwrite
  mode: write
  numjobs:
```

```
- 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        op_size: 8192
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  fs: xfs
  head: --- server1 ---
  iterations: 1
  mgrs:
   --- server1 ---:
     a: null
  mkfs_opts: -f -i size=2048
  mons:
    --- server1 ---:
      a: --- IP Address --:6789
  mount_opts: -o inode64,noatime,logbsize=256k
  osds:
  - --- server1 ---
  osds_per_node: 6
  pdsh_ssh_args: -a -x -1%u %h
  rados_cmd: /usr/bin/rados
  rbd_cmd: /usr/bin/rbd
  tmp_dir: /tmp/cbt
  use_existing: true
  user: root
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```

results

```
librbdfio:
  cmd_path: /usr/local/bin/fio
  fio_out_format: json
  log_avg_msec: 100
  log_bw: true
  log_iops: true
  log_lat: true
  norandommap: true
  osd_ra:
  - 4096
 poolname: rbd_replicated
 precond_time: 600
 prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  time: 60
  time_based: true
  use_existing_volumes: true
  vol_size: 420000
  volumes_per_client:
  - 1
  workloads:
    16k7030:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      op size: 16384
      rwmixread: 70
    16krandomread:
      iodepth:
      - 4
      - 8
      - 12
      - 16
      - 24
```

- 48 - 64 - 128 - 256 - 384 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 16krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 1Mrandomread: iodepth: - 1 - 2 - 3 - 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 jobname: randread mode: randread

```
numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  op_size: 1048576
1Mrandomwrite:
  iodepth:
 - 1
  - 2
  - 3
  - 4
  - 8
  - 12
  - 16
 - 20
  - 24
  - 28
  - 32
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 1048576
1Mseqread:
 iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 10
  - 12
 - 14
 - 16
 - 20
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
```

```
- 1
  - 1
  - 1
  - 1
  - 1
 op_size: 1048576
1Mseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
 - 10
 - 12
  - 14
  - 16
  - 20
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 1048576
256krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
 - 64
  - 128
  jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 262144
```

256krandomwrite:

```
iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 262144
32krandomread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
 - 32
 - 64
 - 128
  - 256
 jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 32768
32krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
```

- 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 ${\tt 4krandomread:}$ iodepth: - 4 - 8 - 12 - 16 - 32 - 48 - 64 - 128 - 256 - 384 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 4krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs:

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 512krandomread: iodepth: - 1 - 2 - 3 - 4 - 8 - 16 - 24 - 32 - 40 - 48 - 64 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 ${\tt 512krandomwrite:}\\$ iodepth: - 1 - 2 - 3 - 4 - 8 - 16 - 24 - 32 - 40 - 48 - 64 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1

- 1 - 1 - 1 - 1 op_size: 524288 512kseqread: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 12 - 16 - 20 - 24 - 32 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 512kseqwrite: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 12 - 16 - 20 - 24 - 32 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 524288 64k3070:

iodepth:

- 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randmix mode: randrw numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 rwmixread: 30 64k7030: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randmix mode: randrw numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 rwmixread: 70 64krandomread: iodepth: - 2 - 4 - 6 - 8 - 12

- 16 - 24 - 32 - 64 - 128 - 256 jobname: randread mode: randread numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64 krandom write:iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64kseqread: iodepth: - 2 - 4 - 6 - 8 - 16 - 24 - 32 - 64 - 128 - 192 - 256 jobname: read

```
mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
 jobname: write
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 65536
8krandomread:
 iodepth:
 - 4
 - 8
  - 12
  - 16
  - 32
  - 48
 - 64
 - 128
 - 256
 - 384
  jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
```

```
- 1
  - 1
  - 1
  - 1
  - 1
 op_size: 8192
{\tt 8krandomwrite:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
 - 24
  - 32
  - 64
  - 128
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 8192
precondition:
 iodepth:
  - 4
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
 op_size: 65536
 precond: true
seq16kread:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
 - 64
  - 96
  - 128
  - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
```

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 seq16kwrite: iodepth: - 2 - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96 - 128 - 192 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 16384 seq256kread: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 48 - 64 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1

```
- 1
  op_size: 262144
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 5
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 262144
{\tt seq32kread:}
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  jobname: seqread
  mode: read
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
seq32kwrite:
  iodepth:
  - 1
  - 2
```

- 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: seqwrite mode: write numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 32768 seq4kread: iodepth: - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96 - 128 - 192 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 4096 seq4kwrite: $\verb"iodepth":$ - 2 - 4 - 8 - 12 - 16 - 24 - 32 - 64 - 96

```
- 192
  - 256
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 4096
{\tt seq8kread:}
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  jobname: seqread
  mode: read
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 8192
seq8kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  - 256
  jobname: seqwrite
  mode: write
  numjobs:
```

```
- 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        - 1
        op_size: 8192
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  fs: xfs
  head: --- server1 ---
  iterations: 1
  mgrs:
   --- server1 ---:
     a: null
  mkfs_opts: -f -i size=2048
  mons:
    --- server1 ---:
      a: --- IP Address --:6789
  mount_opts: -o inode64,noatime,logbsize=256k
  osds:
  - --- server1 ---
  osds_per_node: 6
  pdsh_ssh_args: -a -x -1%u %h
  rados_cmd: /usr/bin/rados
  rbd_cmd: /usr/bin/rbd
  tmp_dir: /tmp/cbt
  use_existing: true
  user: root
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```