

Comparative Performance Report for cbt-4thFeb-main-4k-8vol vs cbt-7thFeb- alexls22-econ-4k-8vol-finegrain

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Comparison summary for cbt-4thFeb-main-4k-8vol vs cbt-7thFeb-alexls22-econ-4k-8vol-finegrain

Sequential Read	cbt_4thFeb_main_4k_8vol	cbt_7thFeb_alexls22_econ_4k_8vol_finegrain	%change	%change latency
4K	68314 IOps@2.3ms	63795 IOps@3.0ms	-7%	30%
8K	40450 IOps@2.4ms	38680 IOps@5.0ms	-4%	108%
16K	22810 IOps@5.6ms	22041 IOps@8.7ms	-3%	55%
32K	18772 IOps@6.8ms	19329 IOps@9.9ms	3%	46%
64K	1095 MB/s@9.6ms	1181 MB/s@14.2ms	8%	48%
256K	1536 MB/s@15.0ms	1591 MB/s@10.5ms	4%	-30%
512K	1566 MB/s@29.5ms	1593 MB/s@10.5ms	2%	-64%
1024K	1574 MB/s@53.4ms	1597 MB/s@13.1ms	1%	-75%

Sequential Write	cbt_4thFeb_main_4k_8vol	cbt_7thFeb_alexls22_econ_4k_8vol_finegrain	%change	%change latency
4K	3074 IOps@52.0ms	7018 IOps@27.3ms	128%	-48%
8K	2707 IOps@47.4ms	5326 IOps@48.1ms	97%	1%
16K	7408 IOps@17.3ms	5985 IOps@21.4ms	-19%	24%
32K	9111 IOps@14.0ms	9777 IOps@13.1ms	7%	-6%
64K	245 MB/s@12.8ms	204 MB/s@41.2ms	-17%	222%
256K	568 MB/s@7.2ms	398 MB/s@20.9ms	-30%	190%
512K	479 MB/s@87.4ms	482 MB/s@34.6ms	1%	-60%
1024K	495 MB/s@84.3ms	509 MB/s@24.2ms	3%	-71%

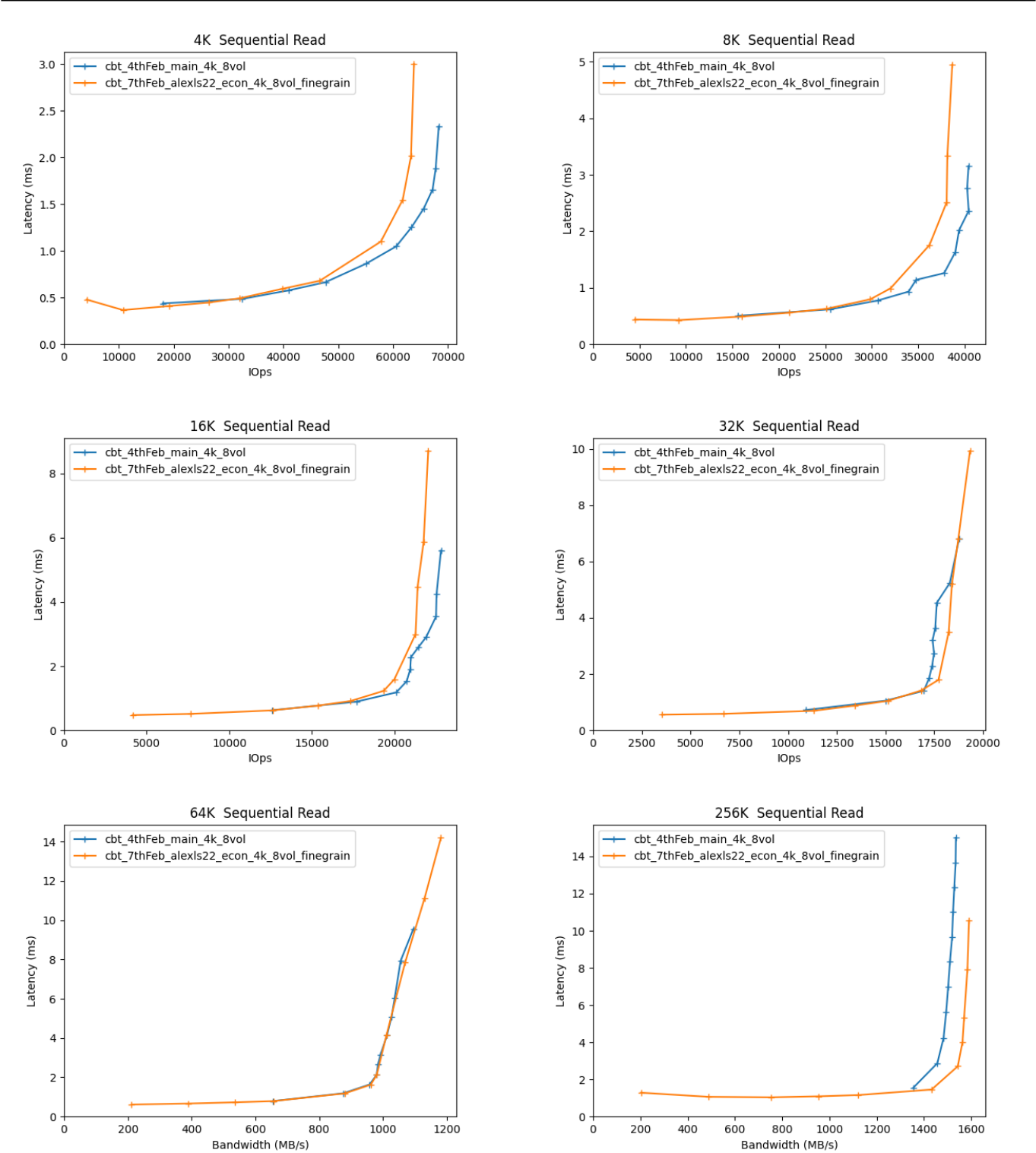
Random Read	cbt_4thFeb_main_4k_8vol	cbt_7thFeb_alexls22_econ_4k_8vol_finegrain	%change	%change latency
4K	81023 IOps@4.7ms	80041 IOps@4.8ms	-1%	2%
8K	52986 IOps@7.2ms	51367 IOps@5.0ms	-3%	-31%
16K	31191 IOps@12.3ms	31203 IOps@12.3ms	0%	0%
32K	28234 IOps@9.1ms	29215 IOps@8.7ms	3%	-4%
64K	1559 MB/s@5.4ms	1606 MB/s@5.2ms	3%	-4%
256K	1695 MB/s@14.8ms	1751 MB/s@9.6ms	3%	-35%
512K	1697 MB/s@27.2ms	1774 MB/s@11.8ms	5%	-57%
1024K	1706 MB/s@54.1ms	1778 MB/s@16.5ms	4%	-70%

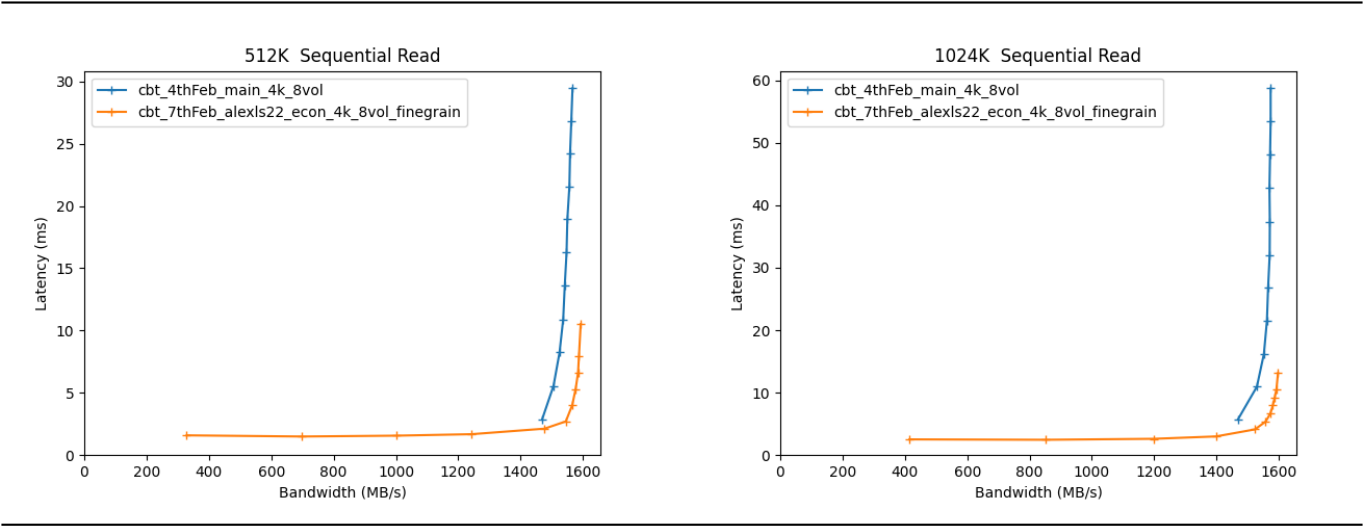
Random Write	cbt_4thFeb_main_4k_8vol	cbt_7thFeb_alexls22_econ_4k_8vol_finegrain	%change	%change latency
4K	2746 IOps@46.6ms	4398 IOps@29.1ms	60%	-38%
8K	2917 IOps@43.8ms	5056 IOps@25.3ms	73%	-42%
16K	5957 IOps@16.1ms	4928 IOps@26.0ms	-17%	61%
32K	3629 IOps@35.2ms	3751 IOps@34.1ms	3%	-3%
64K	191 MB/s@32.9ms	169 MB/s@49.5ms	-12%	50%
256K	421 MB/s@39.7ms	350 MB/s@17.8ms	-17%	-55%
512K	472 MB/s@61.9ms	531 MB/s@63.0ms	12%	2%
1024K	478 MB/s@52.1ms	498 MB/s@58.4ms	4%	12%

Random Read/Write	cbt_4thFeb_main_4k_8vol	cbt_7thFeb_alexls22_econ_4k_8vol_finegrain	%change throughput	%change latency
16K_70/30	7501 IOps@8.5ms	6600 IOps@19.4ms	-12%	128%
64K_30/70	277 MB/s@13.2ms	191 MB/s@43.8ms	-31%	232%

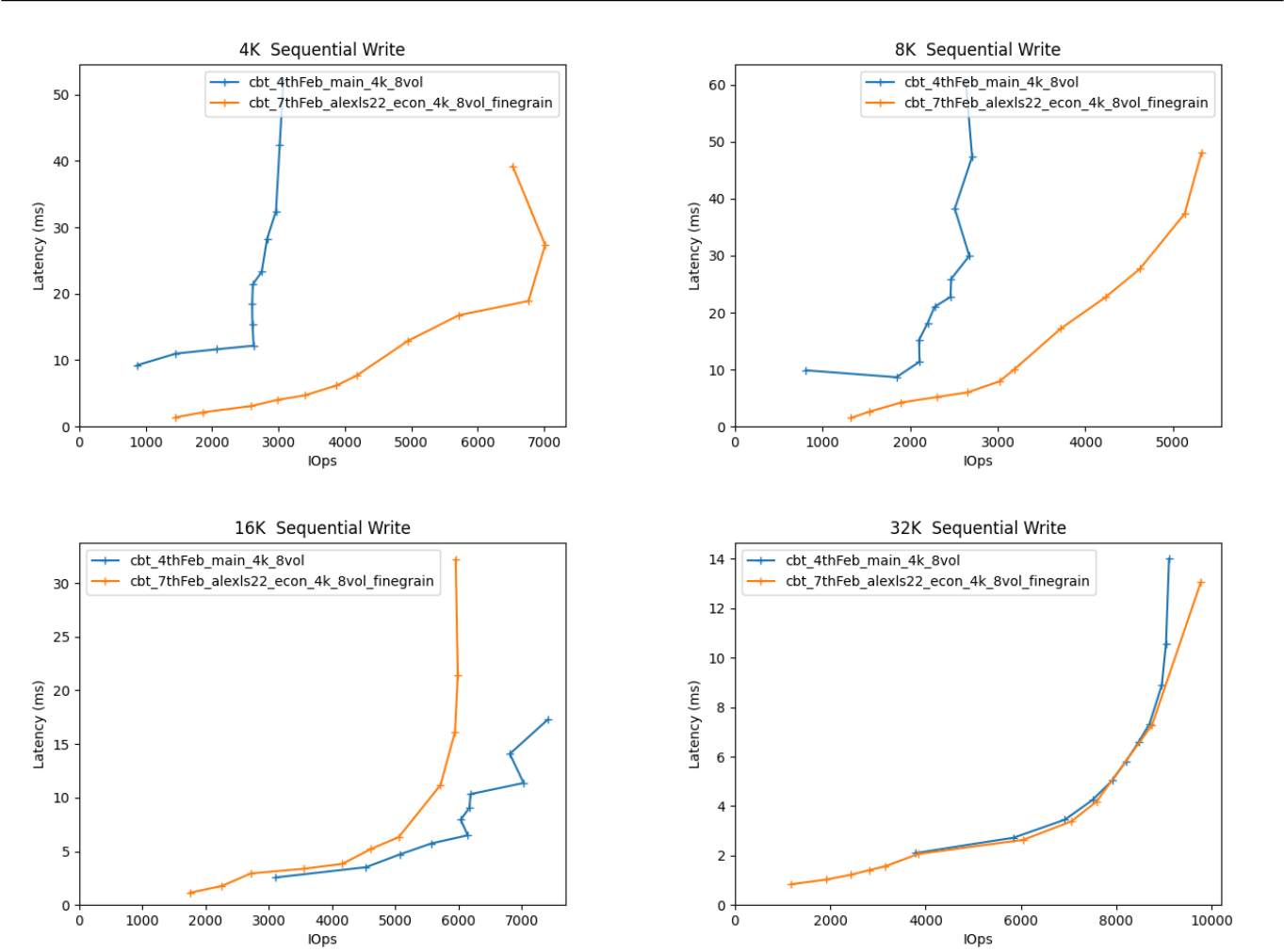
Response Curves

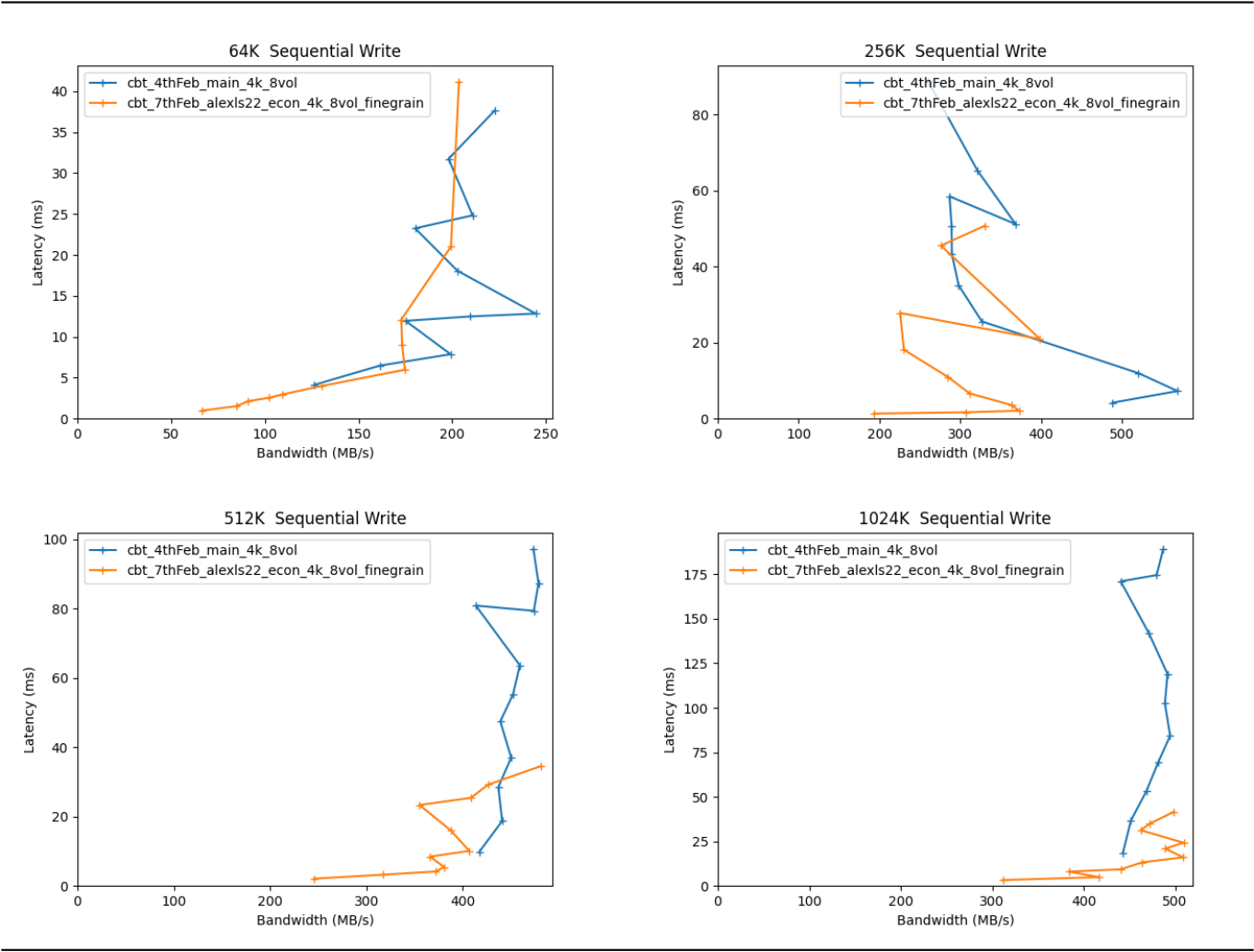
Sequential Read



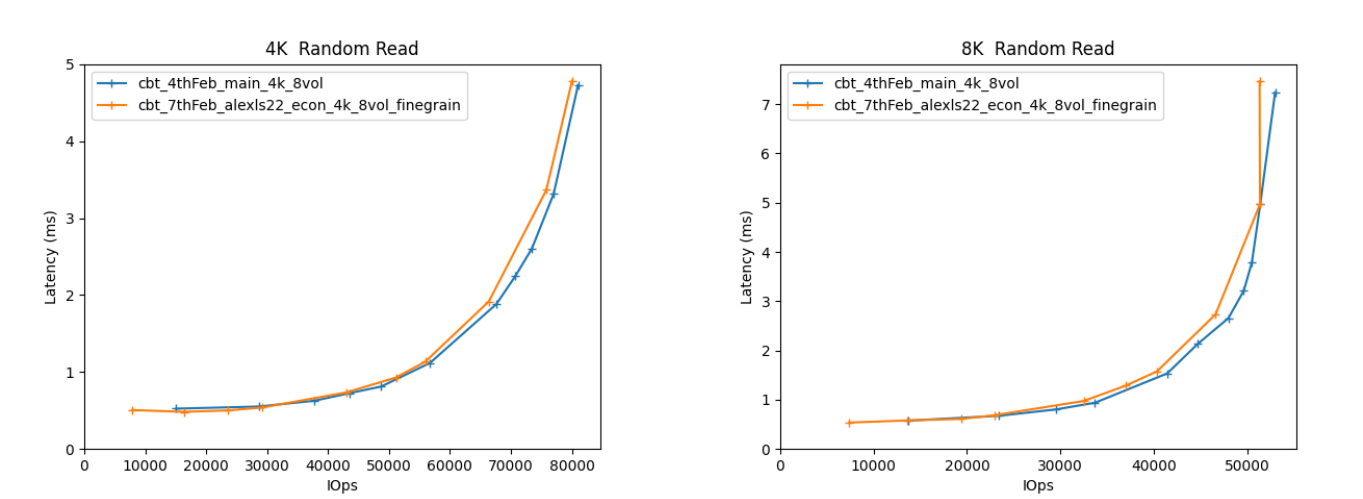


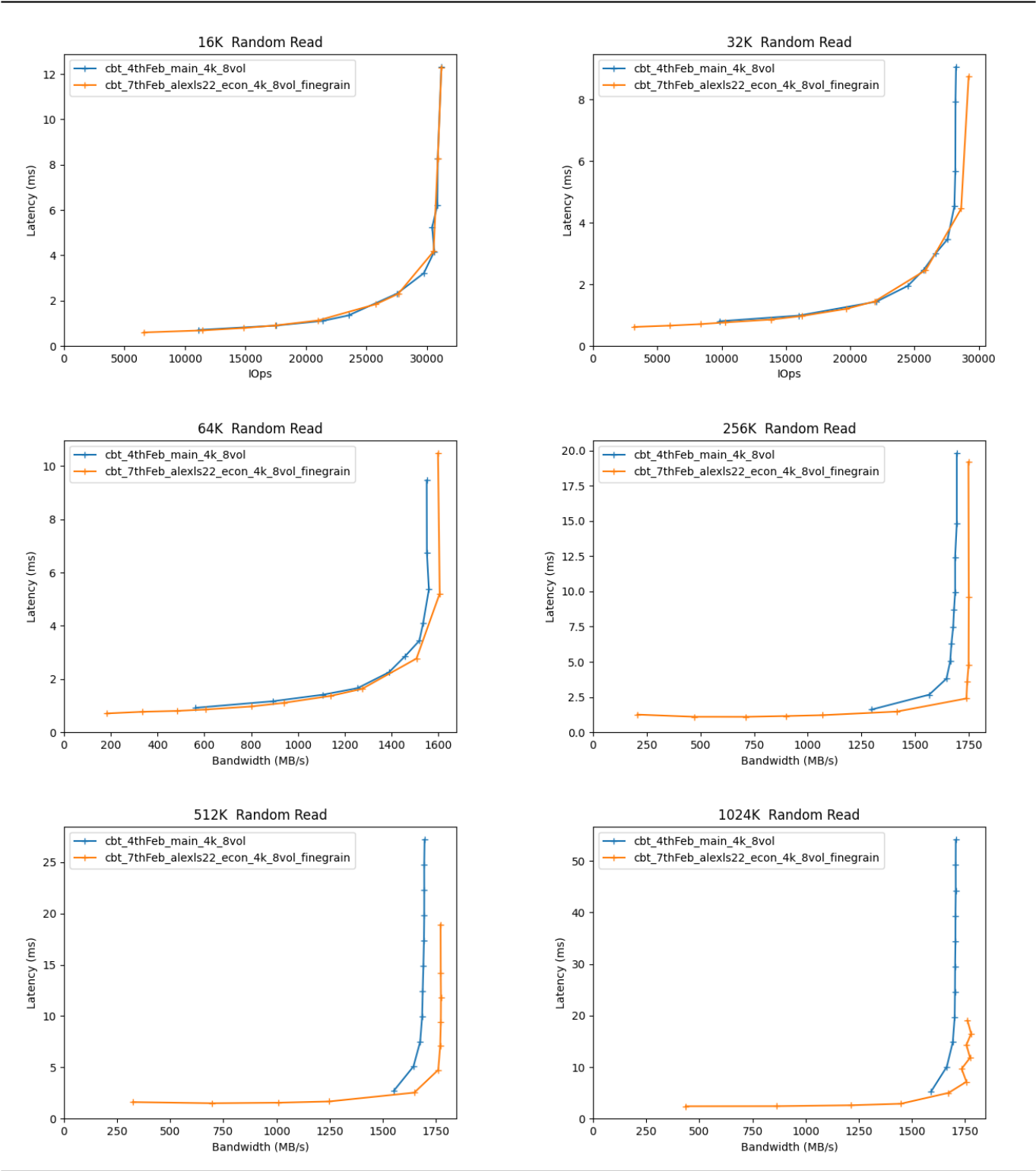
Sequential Write



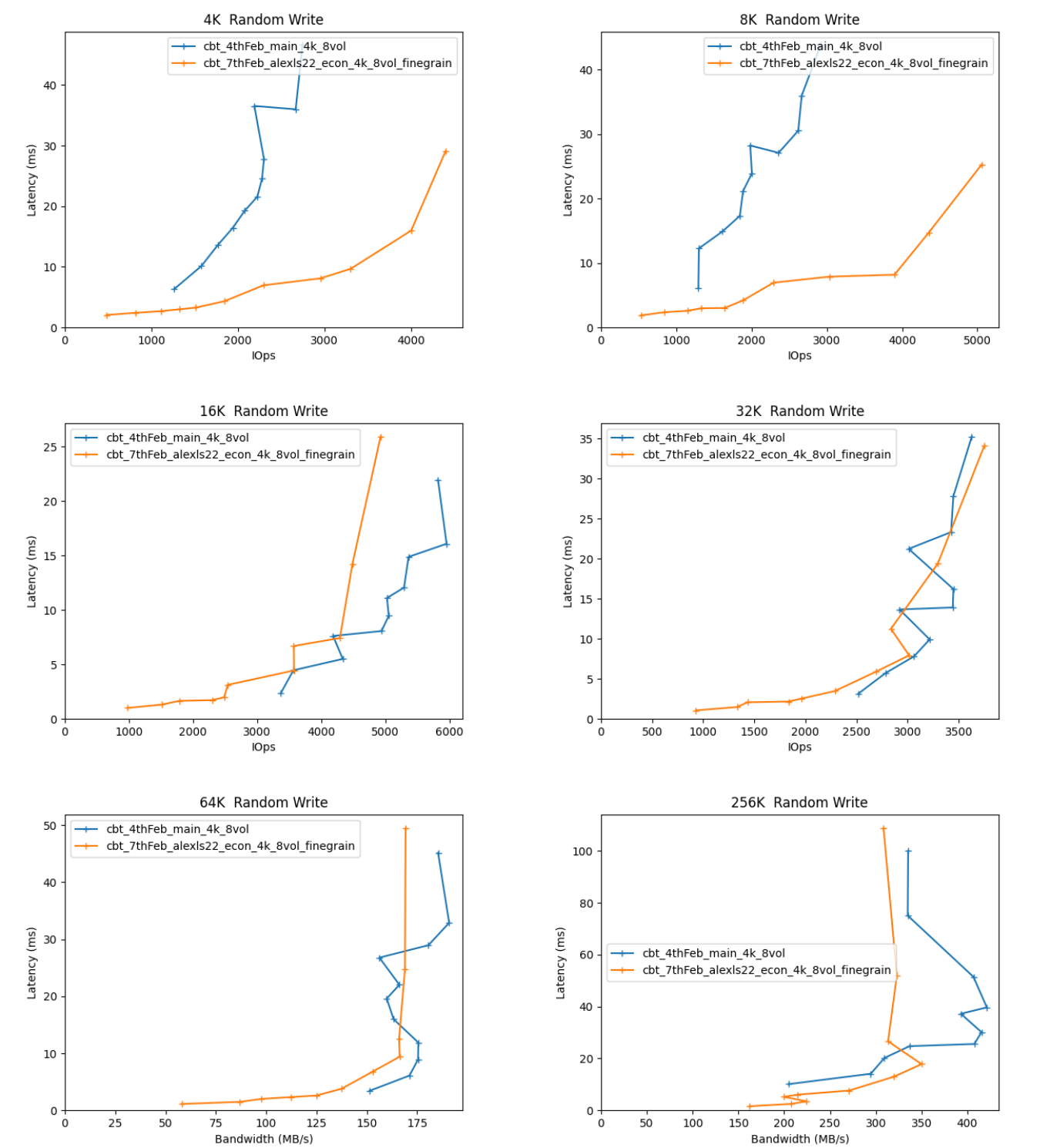


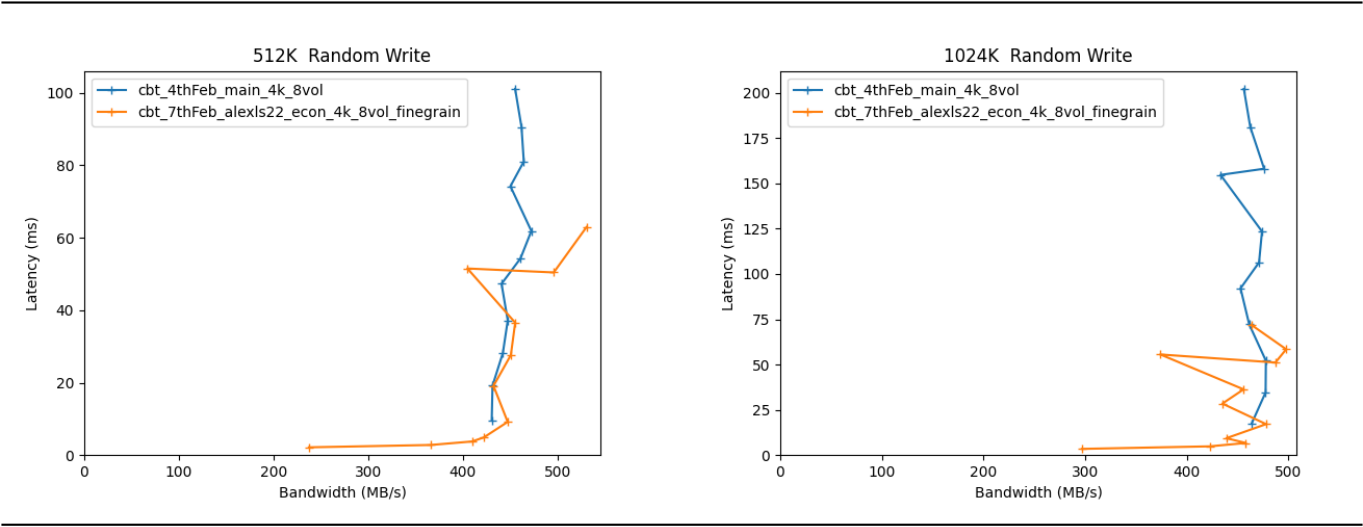
Random Read



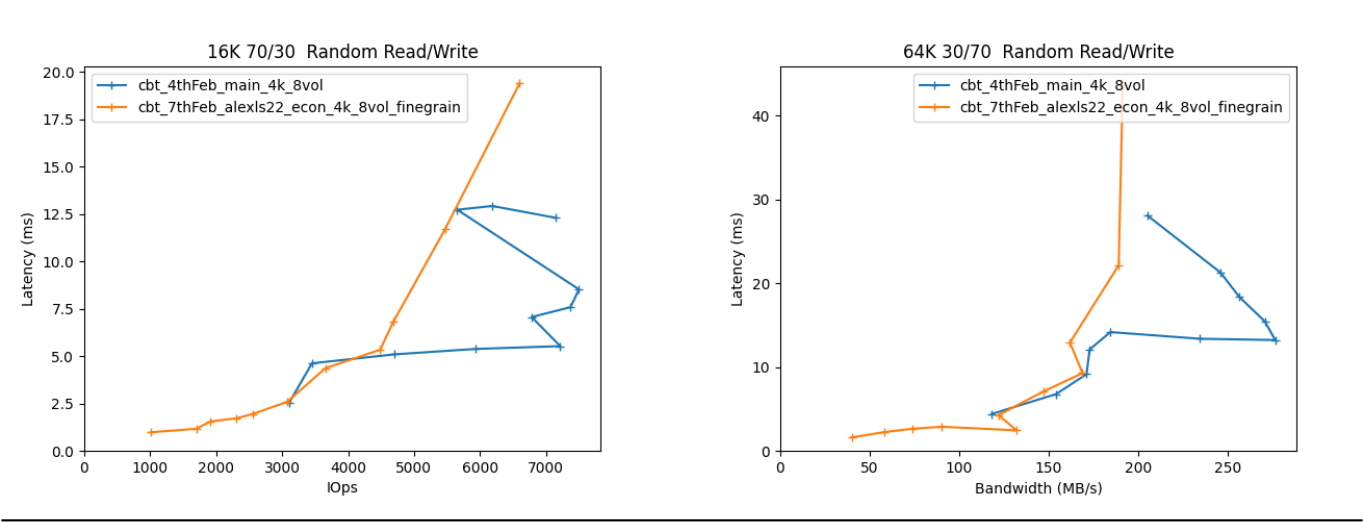


Random Write





Random Read/Write



Configuration yaml files

Only yaml files that differ by more than 20 lines from the yaml file for the baseline directory will be added here in addition to the baseline yaml

results

```

librbd fio:
  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
  precondition_time: 600
  prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
    - 1
  ramp: 30
  time: 60
  time_based: true
  use_existing_volumes: true
  vol_size: 52500
  volumes_per_client:
    - 8
  workloads:
    16k7030:
      iodepth:
        - 1
        - 2
        - 3
        - 4
        - 5
        - 6
        - 7
        - 8
        - 9
        - 10
        - 11
      jobname: randmix
      mode: randrw
      numjobs:
        - 1
      op_size: 16384
      rwmixread: 70
    16krandomread:
      iodepth:
        - 1
        - 2
        - 3
        - 4
        - 8
        - 12
        - 16
        - 20
        - 24
        - 32
        - 48
      jobname: randread
      mode: randread
      numjobs:
        - 1

```

```

    op_size: 16384
16krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
    op_size: 16384
1Mrandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randread
  mode: randread
  numjobs:
    - 1
    op_size: 1048576
1Mrandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
    op_size: 1048576
1Mseqread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6

```

```

- 7
- 8
- 9
- 10
- 11
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 1048576
1Mseqwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 1048576
256krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 262144
256krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1

```

```

    op_size: 262144
32krandomread:
  iodepth:
    - 1
    - 2
    - 4
    - 6
    - 8
    - 10
    - 12
    - 16
    - 20
    - 28
    - 32
  jobname: randread
  mode: randread
  numjobs:
    - 1
    op_size: 32768
32krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
    op_size: 32768
4krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 20
    - 24
    - 32
    - 48
  jobname: randread
  mode: randread
  numjobs:
    - 1
    op_size: 4096
4krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6

```

```

- 7
- 8
- 10
- 12
- 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 4096
512krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 524288
512krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 524288
512kseqread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqread
  mode: read
  numjobs:
    - 1

```



```

    op_size: 524288
512kseqwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
    op_size: 524288
64k3070:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randmix
  mode: randrw
  numjobs:
    - 1
    op_size: 65536
    rwmixread: 30
64k7030:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randmix
  mode: randrw
  numjobs:
    - 1
    op_size: 65536
    rwmixread: 70
64krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4

```

```

- 6
- 8
- 10
- 12
- 16
- 20
- 28
jobname: randread
mode: randread
numjobs:
- 1
op_size: 65536
64krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 65536
64kseqread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 8
    - 10
    - 12
    - 16
    - 20
  jobname: read
  mode: read
  numjobs:
    - 1
  op_size: 65536
64kseqwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: write
  mode: write

```

```

  numjobs:
  - 1
  op_size: 65536
8krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
  - 48
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 8192
8krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 8192
precondition:
  iodepth:
  - 2
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
  - 1
  op_size: 65536
  precondition: true
seq16kread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: seqread

```

```

    mode: read
    numjobs:
      - 1
    op_size: 16384
  seq16kwrite:
    iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 10
      - 12
      - 16
    jobname: seqwrite
    mode: write
    numjobs:
      - 1
    op_size: 16384
  seq256kread:
    iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 9
      - 10
      - 11
    jobname: seqread
    mode: read
    numjobs:
      - 1
    op_size: 262144
  seq256kwrite:
    iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 9
      - 10
      - 11
    jobname: seqwrite
    mode: write
    numjobs:
      - 1
    op_size: 262144
  seq32kread:
    iodepth:
      - 1
      - 2
      - 3

```

```

- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 16
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 32768
seq32kwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 32768
seq4kread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 6
    - 8
    - 10
    - 12
    - 14
    - 16
    - 20
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 4096
seq4kwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
    - 20

```

```

    jobname: seqwrite
    mode: write
    numjobs:
      - 1
    op_size: 4096
  seq8kread:
    iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 8
      - 10
      - 12
      - 14
      - 16
    jobname: seqread
    mode: read
    numjobs:
      - 1
    op_size: 8192
  seq8kwrite:
    iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 10
      - 12
      - 16
      - 20
    jobname: seqwrite
    mode: write
    numjobs:
      - 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 -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}
  librbd fio:
    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
    precondition_time: 600
    prefill:
      blocksize: 64k
      numjobs: 1
    procs_per_volume:
      - 1
    ramp: 30
    time: 60
    time_based: true
    use_existing_volumes: true
    vol_size: 52500
    volumes_per_client:
      - 8
  workloads:
    16k7030:
      iodepth:
        - 1
        - 2
        - 3
        - 4
        - 5
        - 6
        - 7
        - 8
        - 9
        - 10
        - 11
      jobname: randmix
      mode: randrw
      numjobs:
        - 1
      op_size: 16384
      rwmixread: 70
    16k randomread:
      iodepth:
        - 1
        - 2
        - 3

```

```

- 4
- 8
- 12
- 16
- 20
- 24
- 32
- 48
jobname: randread
mode: randread
numjobs:
- 1
op_size: 16384
16krandomwrite:
iodepth:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 16
jobname: randwrite
mode: randwrite
numjobs:
- 1
op_size: 16384
1Mrandomread:
iodepth:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
jobname: randread
mode: randread
numjobs:
- 1
op_size: 1048576
1Mrandomwrite:
iodepth:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
jobname: randwrite

```



```

    mode: randwrite
    numjobs:
      - 1
    op_size: 1048576
1Mseqread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 1048576
1Mseqwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 1048576
256krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 262144
256krandomwrite:
  iodepth:
    - 1
    - 2
    - 3

```

```

- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 262144
32krandomread:
  iodepth:
    - 1
    - 2
    - 4
    - 6
    - 8
    - 10
    - 12
    - 16
    - 20
    - 28
    - 32
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 32768
32krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 32768
4krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 20
    - 24
    - 32
    - 48
  jobname: randread

```

```

    mode: randread
    numjobs:
      - 1
    op_size: 4096
4krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 4096
512krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 524288
512krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 524288
512kseqread:
  iodepth:
    - 1
    - 2
    - 3

```

```

- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 524288
512kseqwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 524288
64k3070:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: randmix
  mode: randrw
  numjobs:
    - 1
  op_size: 65536
  rwmixread: 30
64k7030:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11

```

```

  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 70
64krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 10
  - 12
  - 16
  - 20
  - 28
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 65536
64krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 65536
64kseqread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 8
  - 10
  - 12
  - 16
  - 20
  jobname: read
  mode: read
  numjobs:
  - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1

```

```

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 16
  jobname: write
  mode: write
  numjobs:
    - 1
  op_size: 65536
8krandomread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 12
    - 16
    - 20
    - 24
    - 32
    - 48
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 8192
8krandomwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 8192
precondition:
  iodepth:
    - 2
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
    - 1
  op_size: 65536
  precondition: true
seq16kread:
  iodepth:

```

```

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 16
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 16384
seq16kwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 16384
seq256kread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 262144
seq256kwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9

```

```

- 10
- 11
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 262144
seq32kread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 32768
seq32kwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 32768
seq4kread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 6
    - 8
    - 10
    - 12
    - 14
    - 16
    - 20
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 4096
seq4kwrite:
  iodepth:

```



```

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 10
- 12
- 16
- 20
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 4096
seq8kread:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 8
    - 10
    - 12
    - 14
    - 16
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 8192
seq8kwrite:
  iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
    - 20
  jobname: seqwrite
  mode: write
  numjobs:
    - 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 -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 -FO --rawtoo --sep "," -f {collectl_dir}
```

results

```

librbd fio:
  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
  precondition_time: 600
  prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
    - 1
  ramp: 30
  time: 90
  time_based: true
  use_existing_volumes: true
  vol_size: 52500
  volumes_per_client:
    - 8
  workloads:
    16k7030:
      jobname: randmix
      mode: randrw
      numjobs:
        - 1
      op_size: 16384
      rwmixread: 70
      total_iodepth:
        - 1
        - 2
        - 3
        - 4
        - 5
        - 8
        - 16
        - 24
        - 32
        - 64
        - 128
    16krandomread:
      jobname: randread
      mode: randread
      numjobs:
        - 1
      op_size: 16384
      total_iodepth:
        - 4
        - 8
        - 12
        - 16
        - 24
        - 48
        - 64
        - 128
        - 256
        - 384

```

```
16krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 16384
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
1Mrandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 1048576
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 12
    - 16
    - 20
    - 24
    - 28
    - 32
1Mrandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 1048576
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 12
    - 16
    - 20
    - 24
    - 28
    - 32
1Mseqread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 1048576
  total_iodepth:
    - 1
    - 2
```

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

```
32krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
32krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
4krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 32
    - 48
    - 64
    - 128
    - 256
    - 384
4krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 1
    - 2
    - 3
```

```

- 4
- 5
- 8
- 16
- 24
- 32
- 64
- 128
512krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 524288
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 16
    - 24
    - 32
    - 40
    - 48
    - 64
512krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 524288
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 16
    - 24
    - 32
    - 40
    - 48
    - 64
512kseqread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 524288
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 6
    - 8
    - 12
    - 16
    - 20
    - 24
    - 32
512kseqwrite:

```

```

  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
64k3070:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 30
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
64k7030:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 70
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
64krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 2

```



```

- 4
- 6
- 8
- 12
- 16
- 24
- 32
- 64
- 128
- 256
64krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
64kseqread:
  jobname: read
  mode: read
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
    - 192
    - 256
64kseqwrite:
  jobname: write
  mode: write
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64

```

```

- 128
8krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 32
    - 48
    - 64
    - 128
    - 256
    - 384
8krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
precondition:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
    - 1
  op_size: 65536
  precondition: true
  total_iodepth:
    - 16
seq16kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 16384
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128

```

```

- 192
seq16kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 16384
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq256kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 262144
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 48
    - 64
seq256kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 262144
  total_iodepth:
    - 1
    - 2
    - 3
    - 5
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48
    - 64
seq32kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 2

```

```
- 4
- 8
- 12
- 16
- 24
- 32
- 64
- 96
- 128
- 192
seq32kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
seq4kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq4kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
```

```

    - 192
    - 256
seq8kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq8kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
    - 256
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 -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}
  librbd fio:
    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
    precondition_time: 600
    prefill:
      blocksize: 64k
      numjobs: 1
    procs_per_volume:
      - 1
    ramp: 30
    time: 90
    time_based: true
    use_existing_volumes: true
    vol_size: 52500
    volumes_per_client:
      - 8
    workloads:
      16k7030:
        jobname: randmix
        mode: randrw
        numjobs:
          - 1
        op_size: 16384
        rwmixread: 70
        total_iodepth:
          - 1
          - 2
          - 3
          - 4
          - 5
          - 8
          - 16
          - 24
          - 32
          - 64
          - 128
      16k randomread:
        jobname: randread
        mode: randread
        numjobs:
          - 1
        op_size: 16384
        total_iodepth:
          - 4

```

```

- 8
- 12
- 16
- 24
- 48
- 64
- 128
- 256
- 384
16krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 16384
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
1Mrandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 1048576
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 12
    - 16
    - 20
    - 24
    - 28
    - 32
1Mrandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 1048576
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 12
    - 16
    - 20
    - 24
    - 28
    - 32

```

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



```

- 3
- 4
- 5
- 8
- 16
- 24
- 32
- 64
- 128
32krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
32krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
4krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 32
    - 48
    - 64
    - 128
    - 256
    - 384
4krandomwrite:

```

```

  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 4096
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
512krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 24
  - 32
  - 40
  - 48
  - 64
512krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 24
  - 32
  - 40
  - 48
  - 64
512kseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 3

```

```

- 4
- 6
- 8
- 12
- 16
- 20
- 24
- 32
512kseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 524288
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 6
    - 8
    - 12
    - 16
    - 20
    - 24
    - 32
64k3070:
  jobname: randmix
  mode: randrw
  numjobs:
    - 1
  op_size: 65536
  rwmixread: 30
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
64k7030:
  jobname: randmix
  mode: randrw
  numjobs:
    - 1
  op_size: 65536
  rwmixread: 70
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64

```

```

- 128
64krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
64krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
64kseqread:
  jobname: read
  mode: read
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
    - 192
    - 256
64kseqwrite:
  jobname: write
  mode: write
  numjobs:
    - 1
  op_size: 65536
  total_iodepth:
    - 1

```

```

- 2
- 3
- 4
- 5
- 8
- 16
- 24
- 32
- 64
- 128
8krandomread:
  jobname: randread
  mode: randread
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 32
    - 48
    - 64
    - 128
    - 256
    - 384
8krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
precondition:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
    - 1
  op_size: 65536
  precondition: true
  total_iodepth:
    - 16
seq16kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 16384
  total_iodepth:
    - 2

```

```

- 4
- 8
- 12
- 16
- 24
- 32
- 64
- 96
- 128
- 192
seq16kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 16384
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq256kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 262144
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 48
    - 64
seq256kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 262144
  total_iodepth:
    - 1
    - 2
    - 3
    - 5
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48

```

```

- 64
seq32kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq32kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 32768
  total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
seq4kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq4kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 4096
  total_iodepth:
    - 2

```

```

- 4
- 8
- 12
- 16
- 24
- 32
- 64
- 96
- 128
- 192
- 256
seq8kread:
  jobname: seqread
  mode: read
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
seq8kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
    - 1
  op_size: 8192
  total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
    - 256
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 -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 -FO --rawtoo --sep ";" -f {collectl_dir}
```