Comparitive Performance Report for cbt-27thAug-o01-3way-tentacle-balanced vs 27th-Sep-ec-direct-reads-3way

Table of contents

Comparison summary for cbt-27thAug-o01-3way-tentacle-balanced vs 27th-Sep-ec-direct-reads-3way

Sequential Read	cbt_27thAug_o01_3way_tentacle_balanced	27th_Sep_ec_direct_reads_3way	%change throughput	%change latency
4K	233243 IOps@1.6ms	220836 IOps@1.7ms	-5%	6%
8K	218186 IOps@1.8ms	210231 IOps@1.8ms	-4%	0%
16K	198882 IOps@1.4ms	191084 IOps@1.5ms	-4%	7%
32K	149566 IOps@1.3ms	147245 IOps@1.3ms	-2%	0%
64K	7786 MB/s@2.1ms	7625 MB/s@2.2ms	-2%	5%
256K	11159 MB/s@1.5ms	11156 MB/s@12.0ms	-0%	700%
512K	9144 MB/s@1.8ms	11982 MB/s@11.2ms	31%	522%
1024K	7178 MB/s@2.9ms	12551 MB/s@5.3ms	75%	83%

Sequential Write	cbt_27thAug_o01_3way_tentacle_balanced	27th_Sep_ec_direct_reads_3way	%change throughput	%change latency
4K	510965 IOps@3.0ms	496157 IOps@3.1ms	-3%	3%
8K	334276 IOps@4.6ms	328509 IOps@4.7ms	-2%	2%
16K	184493 IOps@5.5ms	181537 IOps@5.6ms	-2%	2%
32K	103026 IOps@7.4ms	99713 IOps@7.7ms	-3%	4%
64K	3534 MB/s@9.5ms	3422 MB/s@9.8ms	-3%	3%
256K	3949 MB/s@16.9ms	3853 MB/s@17.3ms	-2%	2%
512K	4087 MB/s@8.0ms	3982 MB/s@8.2ms	-3%	2%
1024K	4020 MB/s@16.2ms	4071 MB/s@32.4ms	1%	100%

Random Read	cbt_27thAug_o01_3way_tentacle_balanced	27th_Sep_ec_direct_reads_3way	%change throughput	%change latency
4K	216530 IOps@3.5ms	204999 IOps@3.7ms	-5%	6%
8K	209775 IOps@3.7ms	196145 IOps@3.9ms	-6%	5%
16K	193403 IOps@3.0ms	180473 IOps@3.3ms	-7%	10%
32K	159835 IOps@3.2ms	152053 IOps@3.4ms	-5%	6%
64K	8100 MB/s@3.1ms	7786 MB/s@3.2ms	-4%	3%
256K	13168 MB/s@2.5ms	11532 MB/s@2.9ms	-12%	16%
512K	12732 MB/s@2.6ms	11996 MB/s@2.8ms	-6%	8%
1024K	10192 MB/s@3.3ms	12190 MB/s@2.7ms	20%	-18%

Random Write	cbt_27thAug_o01_3way_tentacle_balanced	27th_Sep_ec_direct_reads_3way	%change throughput	%change latency
4K	51182 IOps@5.0ms	49410 IOps@5.2ms	-3%	4%
8K	48579 IOps@10.5ms	46732 IOps@8.2ms	-4%	-22%
16K	45875 IOps@11.1ms	44616 IOps@8.6ms	-3%	-23%
32K	43891 IOps@8.7ms	41611 IOps@9.2ms	-5%	6%
64K	2428 MB/s@10.3ms	2242 MB/s@11.2ms	-8%	9%
256K	4064 MB/s@4.0ms	3910 MB/s@6.3ms	-4%	57%
512K	4501 MB/s@7.2ms	4384 MB/s@7.4ms	-3%	3%
1024K	4174 MB/s@5.6ms	4123 MB/s@7.7ms	-1%	38%

Comparison summary for cbt-27thAug-o01-3way-tentacle-balanced vs 27th-Sep-ec-direct-reads-3way

Random Read/Write	cbt_27thAug_o01_3way_tentacle_balanced	27th_Sep_ec_direct_reads_3way	%change throughput	%change latency
4K_70/30	94949 IOps@4.0ms	90173 IOps@2.8ms	-5%	-30%
16K_70/30	87433 IOps@2.9ms	85207 IOps@3.0ms	-3%	3%
64K_70/30	4287 MB/s@3.9ms	4204 MB/s@4.0ms	-2%	3%
64K_30/70	2901 MB/s@5.7ms	2745 MB/s@6.1ms	-5%	7%

Response Curves

Sequential Read
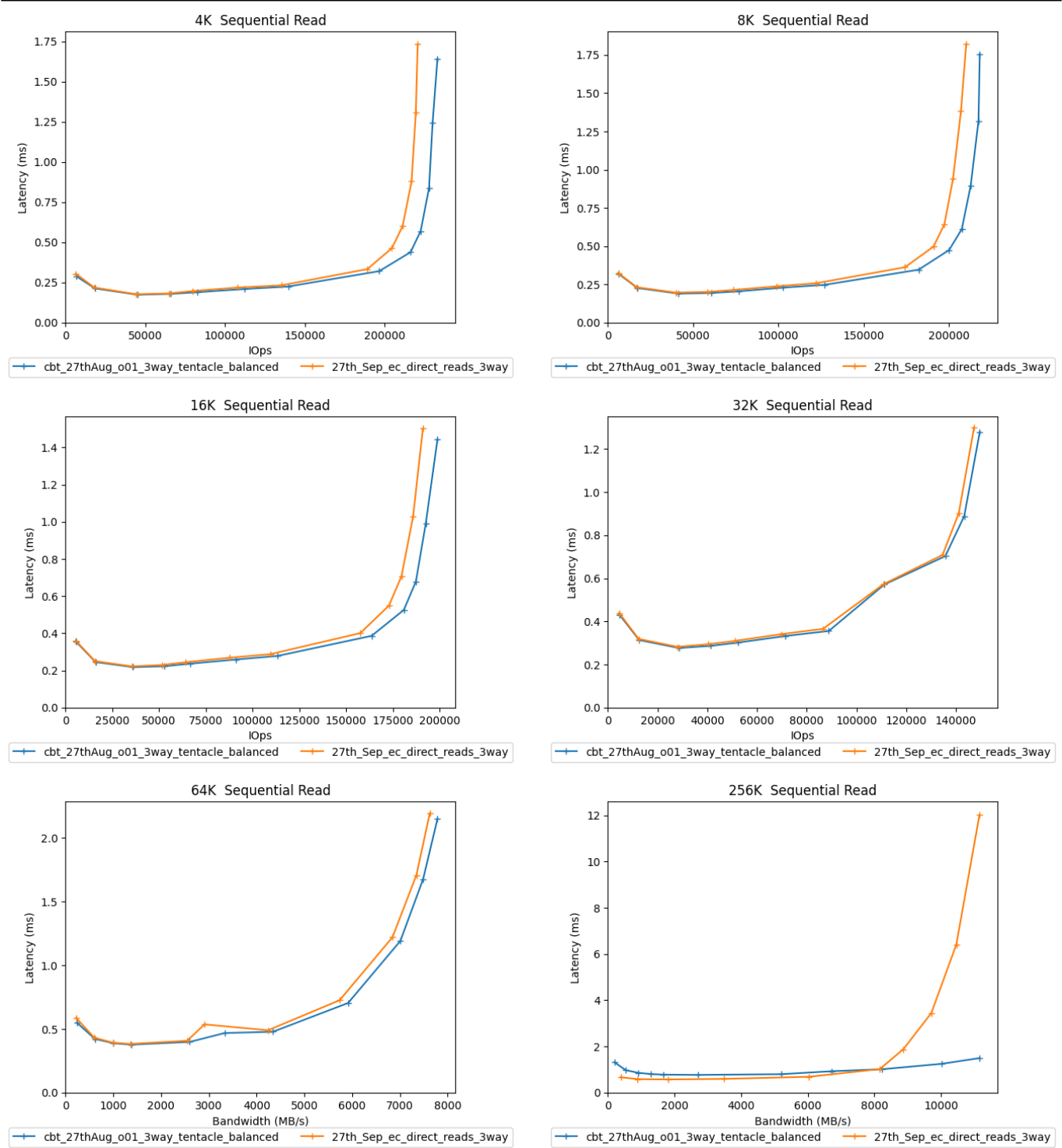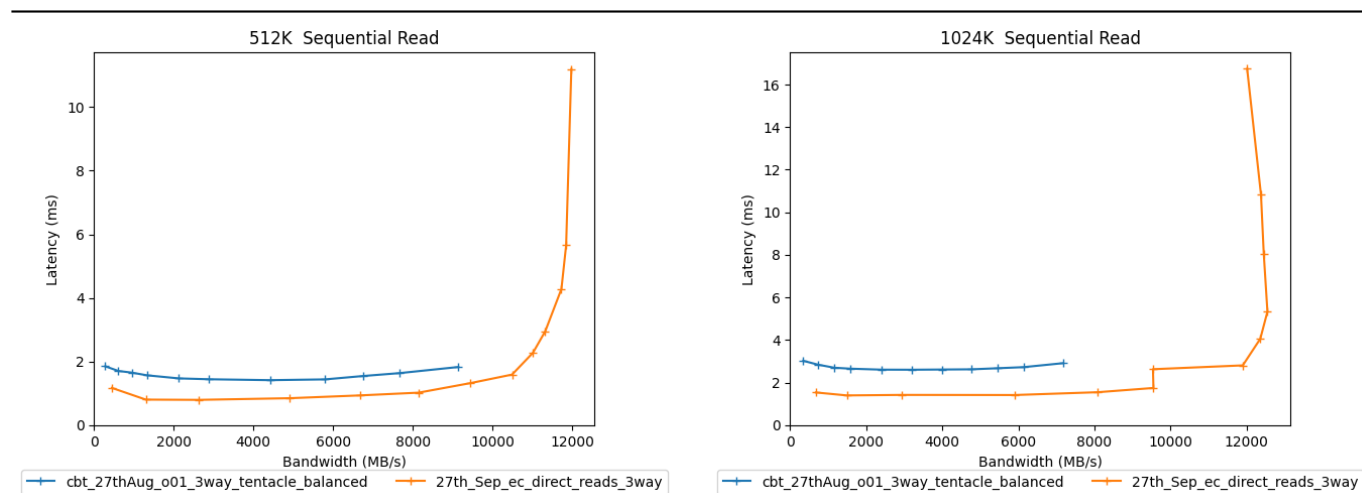
Sequential Write
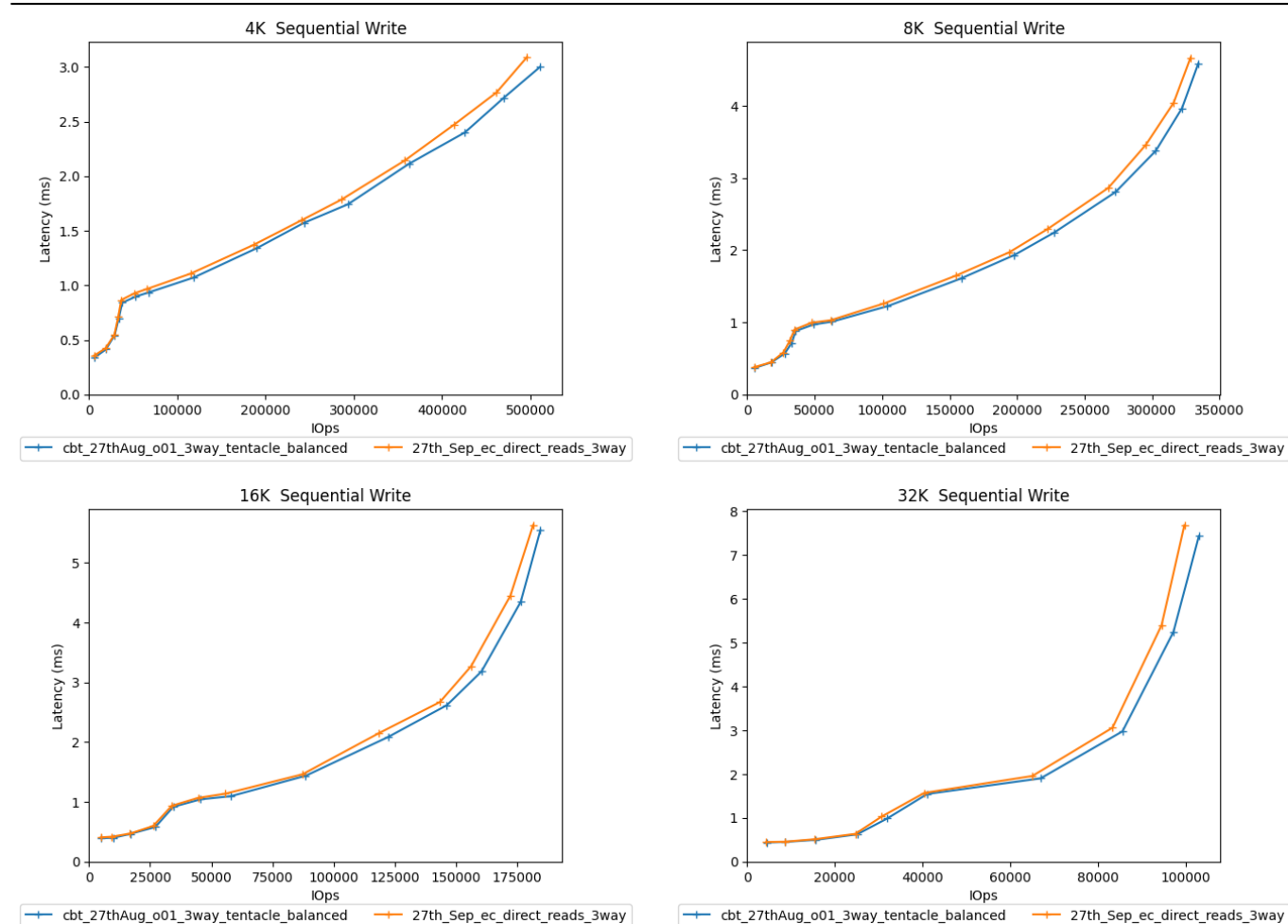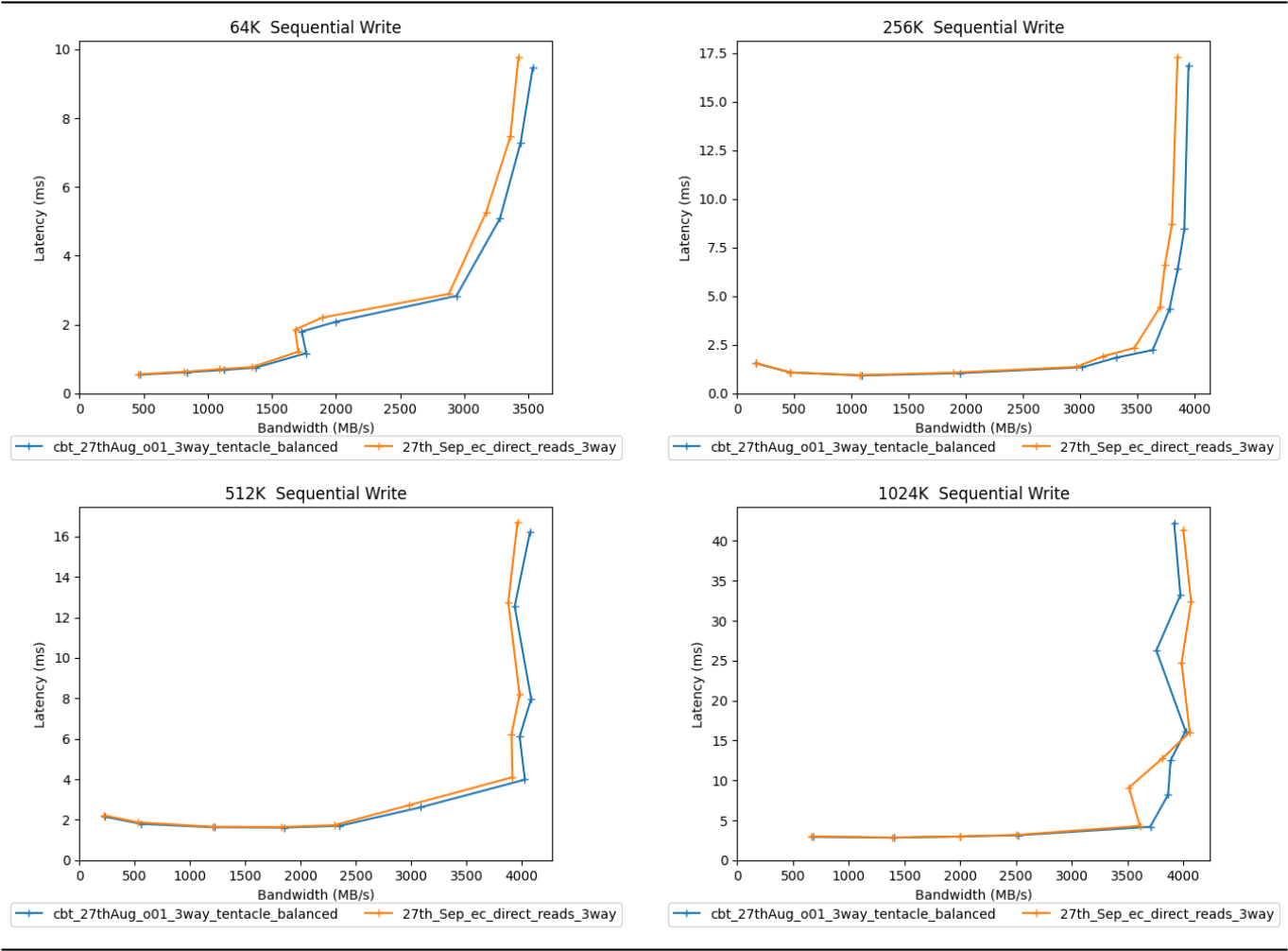
Random Read

Random Write

4K Random Write

8K Random Write

16K Random Write

32K Random Write

64K Random Write

256K Random Write

512K Random Write
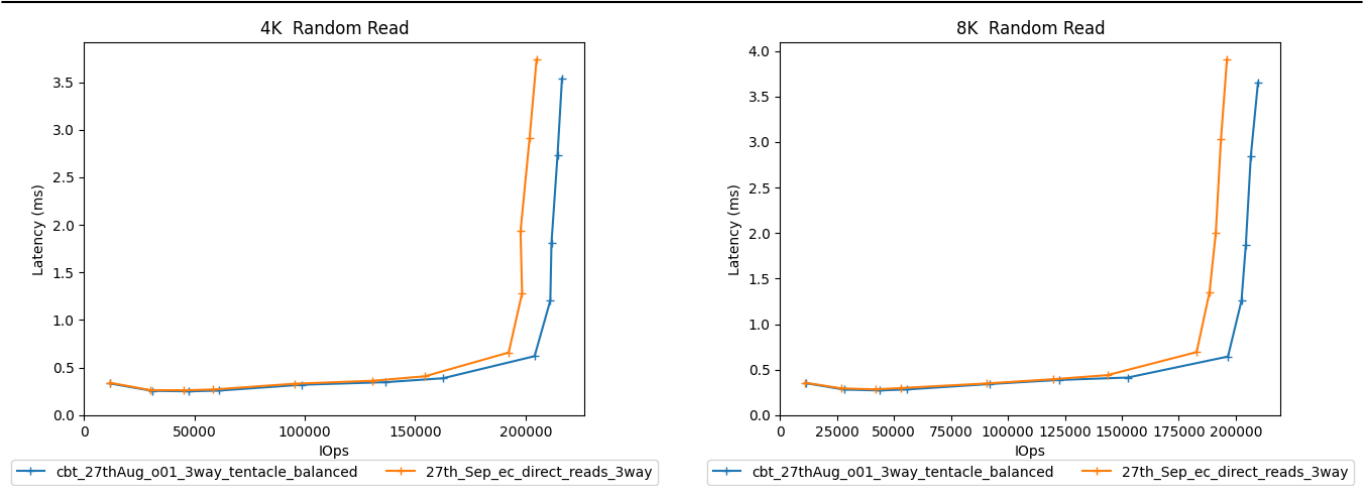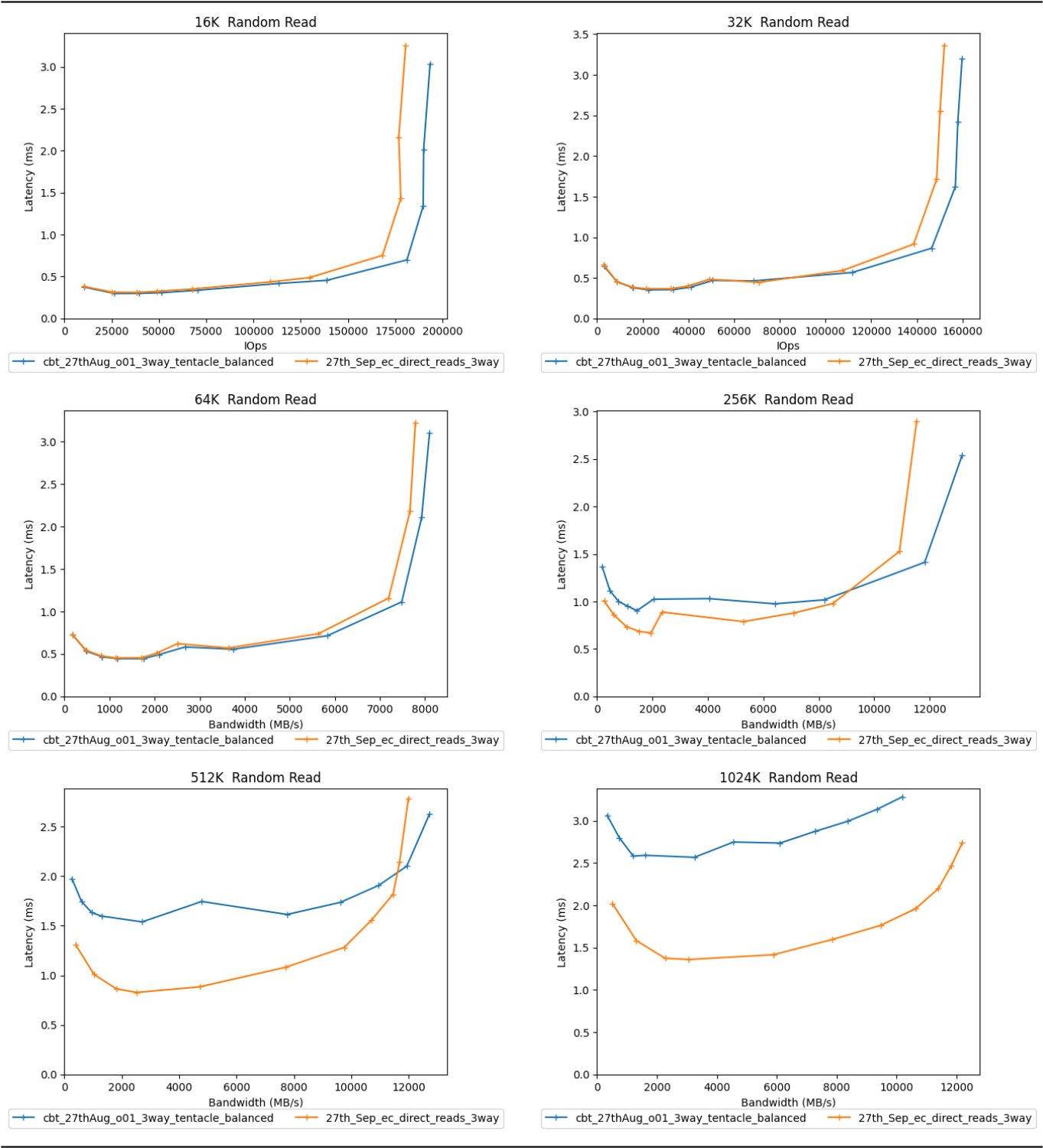
1024K Random Write
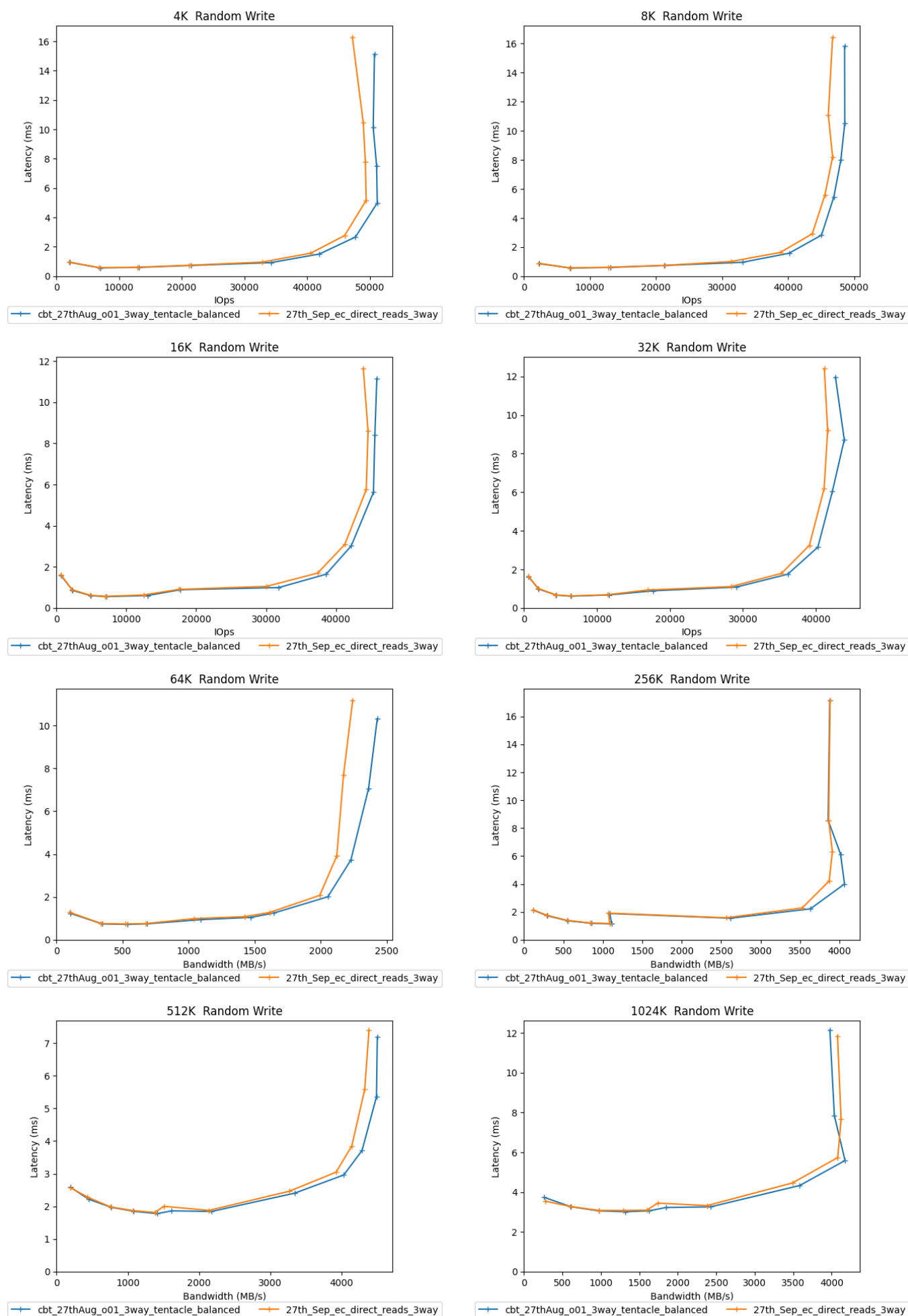
Random Read/Write
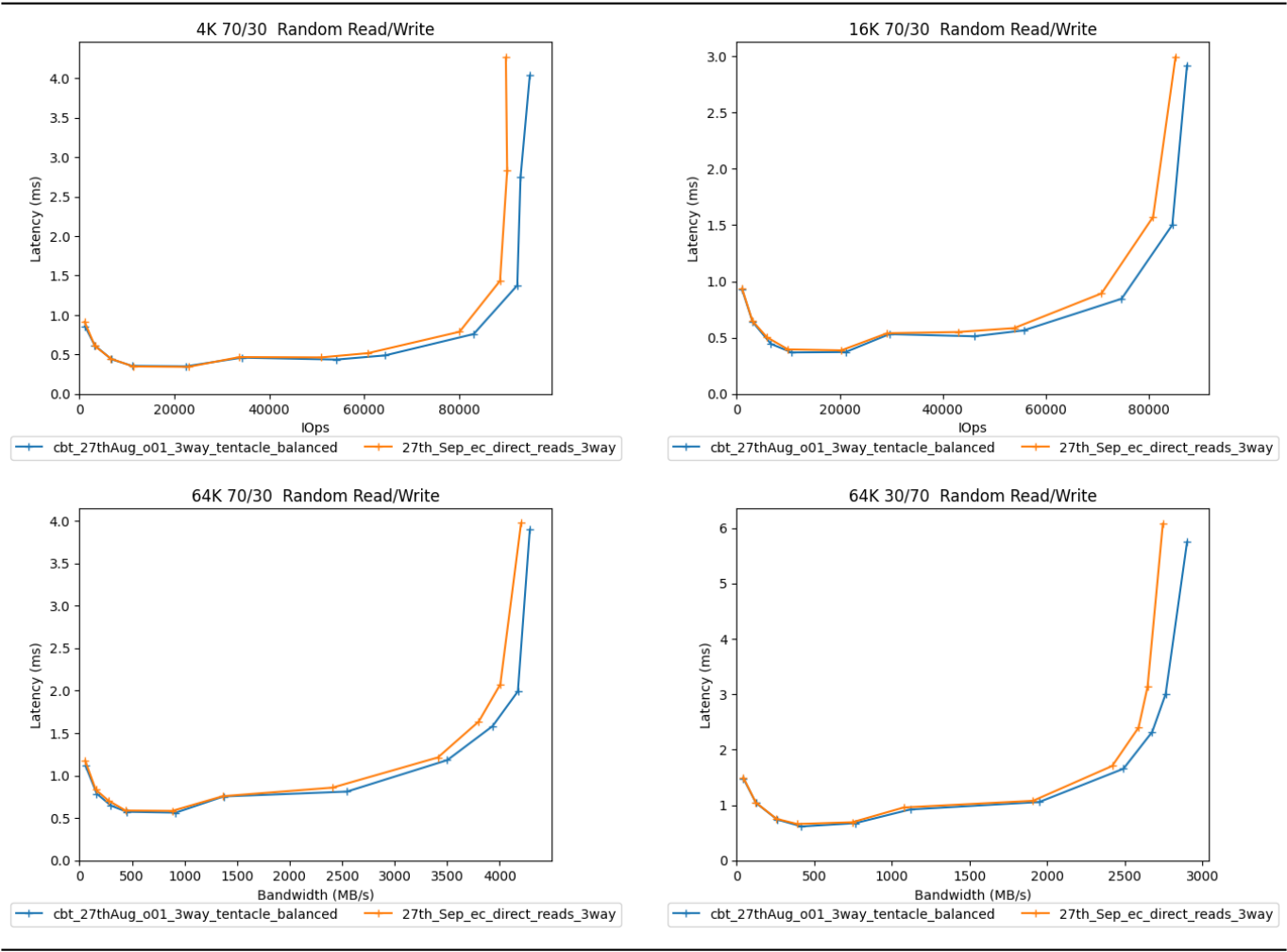
Configuration yaml files

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

```
librbdfio:
  cmd_path: /usr/local/bin/fio2
  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
  prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  rbdname: cbt-librbdfio
  time: 90
  time_based: true
  use_existing_volumes: true
  vol_size: 608333
  volumes_per_client:
  - 16
  workloads:
    16k7030:
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 16384
      rwmixread: 70
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      - 256
    16krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 4
      - 8
      - 12
      - 16
      - 24
      - 48
      - 64
      - 128
      - 256
      - 384
```

```
        - 588
    16krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 384
      - 512
    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
      - 5
      - 6
      - 8
      - 16
      - 24
      - 32
      - 48
    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:
            - 2
            - 4
            - 6
            - 8
            - 16
            - 32
            - 48
            - 64
            - 96
            - 128
            - 160
          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
            - 32
            - 64
```

```
          - 96
          - 128
          - 256
      32krandomread:
        jobname: randread
        mode: randread
        numjobs:
        - 1
        op_size: 32768
        total_iodepth:
        - 2
        - 4
        - 6
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 128
        - 256
        - 384
        - 512
      32krandomwrite:
        jobname: randwrite
        mode: randwrite
        numjobs:
        - 1
        op_size: 32768
        total_iodepth:
        - 1
        - 2
        - 3
        - 4
        - 8
        - 16
        - 32
        - 64
        - 128
        - 256
        - 384
        - 512
      4k7030:
        jobname: randmix
        mode: randrw
        numjobs:
        - 1
        op_size: 4096
        rwmixread: 70
        total_iodepth:
        - 1
        - 2
        - 3
        - 4
        - 8
        - 16
        - 24
        - 32
        - 64
        - 128
        - 256
        - 384
      4krandomread:
```

```
    jobname: randread
    mode: randread
    numjobs:
    - 1
    op_size: 4096
    total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 32
    - 48
    - 64
    - 128
    - 256
    - 384
    - 588
    - 768
  4krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 4096
    total_iodepth:
    - 2
    - 4
    - 8
    - 16
    - 32
    - 64
    - 128
    - 256
    - 384
    - 512
    - 768
  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
        - 5
        - 6
        - 8
        - 16
        - 24
        - 32
        - 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
      - 4
      - 6
      - 8
      - 16
      - 32
      - 48
      - 64
      - 96
      - 128
    64k3070:
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 65536
      rwmixread: 30
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 32
      - 64
      - 96
```

```
        - 128
        - 256
    64k7030:
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 65536
      rwmixread: 70
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 32
      - 64
      - 96
      - 128
      - 256
    64krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 65536
      total_iodepth:
      - 2
      - 4
      - 6
      - 8
      - 12
      - 16
      - 24
      - 32
      - 64
      - 128
      - 256
      - 384
    64krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 65536
      total_iodepth:
      - 2
      - 4
      - 6
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      - 256
      - 384
    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:
        - 4
        - 8
        - 12
        - 16
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
    8krandomread:
        jobname: randread
        mode: randread
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 4
        - 8
        - 12
        - 16
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 588
        - 768
    8krandomwrite:
        jobname: randwrite
        mode: randwrite
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 4
        - 8
        - 16
        - 32
        - 64
```

```
        - 128
        - 256
        - 384
        - 512
        - 768
    precondition:
      jobname: precond1rw
      mode: randwrite
      monitor: false
      numjobs:
      - 1
      op_size: 65536
      time: 600
      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
      - 288
    seq16kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
      - 1024
    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
          - 4
          - 8
          - 16
          - 24
          - 32
          - 64
          - 96
          - 128
          - 256
        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:
          - 2
          - 4
          - 8
          - 16
          - 32
          - 64
          - 128
          - 256
          - 512
          - 768
        seq4kread:
```

```
            jobname: seqread
            mode: read
            numjobs:
            - 1
            op_size: 4096
            total_iodepth:
            - 2
            - 4
            - 8
            - 12
            - 16
            - 24
            - 32
            - 64
            - 96
            - 128
            - 192
            - 288
            - 384
        seq4kwrite:
            jobname: seqwrite
            mode: write
            numjobs:
            - 1
            op_size: 4096
            total_iodepth:
            - 2
            - 8
            - 16
            - 24
            - 32
            - 48
            - 64
            - 128
            - 256
            - 384
            - 512
            - 768
            - 1024
            - 1280
            - 1536
        seq8kread:
            jobname: seqread
            mode: read
            numjobs:
            - 1
            op_size: 8192
            total_iodepth:
            - 2
            - 4
            - 8
            - 12
            - 16
            - 24
            - 32
            - 64
            - 96
            - 128
            - 192
            - 288
            - 384
        seq8kwrite:
            jobname: seqwrite
```

```
        mode: write
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 8
        - 16
        - 24
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
        - 1024
        - 1280
        - 1536
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: 8
  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: ljsanders
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}

  librbdfio:
    cmd_path: /usr/local/bin/fio2
    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
prefill:
  blocksize: 64k
  numjobs: 1
procs_per_volume:
- 1
ramp: 30
rbdname: cbt-librbdfio
time: 90
time_based: true
use_existing_volumes: true
vol_size: 608333
volumes_per_client:
- 16
workloads:
  16k7030:
    jobname: randmix
    mode: randrw
    numjobs:
    - 1
    op_size: 16384
    rwmixread: 70
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
  16krandomread:
    jobname: randread
    mode: randread
    numjobs:
    - 1
    op_size: 16384
    total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 24
    - 48
    - 64
    - 128
    - 256
    - 384
    - 588
  16krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 16384
    total_iodepth:
    - 1
    - 2
```

```
        - 3
        - 4
        - 8
        - 16
        - 32
        - 64
        - 128
        - 256
        - 384
        - 512
    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
      - 5
      - 6
      - 8
      - 16
      - 24
      - 32
      - 48
    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:
      - 2
      - 4
      - 6
      - 8
      - 16
      - 32
      - 48
      - 64
      - 96
      - 128
      - 160
    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
      - 32
      - 64
      - 96
      - 128
      - 256
    32krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 32768
      total_iodepth:
```

```
                      - 2
                      - 4
                      - 6
                      - 8
                      - 12
                      - 16
                      - 24
                      - 32
                      - 64
                      - 128
                      - 256
                      - 384
                      - 512
                  32krandomwrite:
                    jobname: randwrite
                    mode: randwrite
                    numjobs:
                    - 1
                    op_size: 32768
                    total_iodepth:
                    - 1
                    - 2
                    - 3
                    - 4
                    - 8
                    - 16
                    - 32
                    - 64
                    - 128
                    - 256
                    - 384
                    - 512
                  4k7030:
                    jobname: randmix
                    mode: randrw
                    numjobs:
                    - 1
                    op_size: 4096
                    rwmixread: 70
                    total_iodepth:
                    - 1
                    - 2
                    - 3
                    - 4
                    - 8
                    - 16
                    - 24
                    - 32
                    - 64
                    - 128
                    - 256
                    - 384
                  4krandomread:
                    jobname: randread
                    mode: randread
                    numjobs:
                    - 1
                    op_size: 4096
                    total_iodepth:
                    - 4
                    - 8
                    - 12
                    - 16
```

```
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 588
      - 768
  4krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 4096
    total_iodepth:
    - 2
    - 4
    - 8
    - 16
    - 32
    - 64
    - 128
    - 256
    - 384
    - 512
    - 768
  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
    - 5
    - 6
    - 8
    - 16
    - 24
    - 32
    - 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
  - 4
  - 6
  - 8
  - 16
  - 32
  - 48
  - 64
  - 96
  - 128
64k3070:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 30
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 32
  - 64
  - 96
  - 128
  - 256
64k7030:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 70
  total_iodepth:
```

```
        - 1
        - 2
        - 3
        - 4
        - 8
        - 16
        - 32
        - 64
        - 96
        - 128
        - 256
    64krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 65536
      total_iodepth:
      - 2
      - 4
      - 6
      - 8
      - 12
      - 16
      - 24
      - 32
      - 64
      - 128
      - 256
      - 384
    64krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 65536
      total_iodepth:
      - 2
      - 4
      - 6
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      - 256
      - 384
    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:
      - 4
      - 8
      - 12
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 512
    8krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 8192
      total_iodepth:
      - 4
      - 8
      - 12
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 588
      - 768
    8krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 8192
      total_iodepth:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
    precondition:
      jobname: precond1rw
      mode: randwrite
      monitor: false
      numjobs:
```

```
      - 1
      op_size: 65536
      time: 600
      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
      - 288
    seq16kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
      - 1024
    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
      - 4
      - 8
      - 16
      - 24
      - 32
      - 64
      - 96
      - 128
      - 256
    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:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 512
      - 768
    seq4kread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 2
      - 4
      - 8
      - 12
```

```
            - 16
            - 24
            - 32
            - 64
            - 96
            - 128
            - 192
            - 288
            - 384
        seq4kwrite:
          jobname: seqwrite
          mode: write
          numjobs:
          - 1
          op_size: 4096
          total_iodepth:
          - 2
          - 8
          - 16
          - 24
          - 32
          - 48
          - 64
          - 128
          - 256
          - 384
          - 512
          - 768
          - 1024
          - 1280
          - 1536
        seq8kread:
          jobname: seqread
          mode: read
          numjobs:
          - 1
          op_size: 8192
          total_iodepth:
          - 2
          - 4
          - 8
          - 12
          - 16
          - 24
          - 32
          - 64
          - 96
          - 128
          - 192
          - 288
          - 384
        seq8kwrite:
          jobname: seqwrite
          mode: write
          numjobs:
          - 1
          op_size: 8192
          total_iodepth:
          - 2
          - 8
          - 16
          - 24
          - 32
```

```
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
        - 1024
        - 1280
        - 1536
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: 8
  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: ljsanders
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```

results

```
librbdfio:
  cmd_path: /usr/local/bin/fio2
  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
  prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  rbdname: cbt-librbdfio
  time: 90
  time_based: true
  use_existing_volumes: true
  vol_size: 608333
  volumes_per_client:
  - 16
  workloads:
    16k7030:
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 16384
      rwmixread: 70
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 24
      - 32
      - 64
      - 128
      - 256
    16krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 4
      - 8
      - 12
      - 16
      - 24
      - 48
      - 64
      - 128
      - 256
      - 384
```

```
      - 588
    16krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 384
      - 512
    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
      - 5
      - 6
      - 8
      - 16
      - 24
      - 32
      - 48
    1Mseqread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
      op_size: 1048576
      total_iodepth:
```

```
        - 1
        - 2
        - 4
        - 8
        - 12
        - 16
        - 24
        - 32
        - 48
        - 64
        - 96
        - 128
        - 192
    1Mseqwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 1048576
      total_iodepth:
      - 2
      - 4
      - 6
      - 8
      - 16
      - 32
      - 48
      - 64
      - 96
      - 128
      - 160
    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
```

```
          - 32
          - 64
          - 96
          - 128
          - 256
      32krandomread:
        jobname: randread
        mode: randread
        numjobs:
        - 1
        op_size: 32768
        total_iodepth:
        - 2
        - 4
        - 6
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 128
        - 256
        - 384
        - 512
      32krandomwrite:
        jobname: randwrite
        mode: randwrite
        numjobs:
        - 1
        op_size: 32768
        total_iodepth:
        - 1
        - 2
        - 3
        - 4
        - 8
        - 16
        - 32
        - 64
        - 128
        - 256
        - 384
        - 512
      4k7030:
        jobname: randmix
        mode: randrw
        numjobs:
        - 1
        op_size: 4096
        rwmixread: 70
        total_iodepth:
        - 1
        - 2
        - 3
        - 4
        - 8
        - 16
        - 24
        - 32
        - 64
        - 128
        - 256
```

```
          - 384
    4krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 4
      - 8
      - 12
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 588
      - 768
    4krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
    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
                    - 5
                    - 6
                    - 8
                    - 16
                    - 24
                    - 32
                    - 48
                    - 64
            512kseqread:
                jobname: seqread
                mode: read
                numjobs:
                - 1
                op_size: 524288
                total_iodepth:
                - 1
                - 2
                - 4
                - 8
                - 12
                - 16
                - 24
                - 32
                - 48
                - 64
                - 96
                - 128
                - 256
            512kseqwrite:
                jobname: seqwrite
                mode: write
                numjobs:
                - 1
                op_size: 524288
                total_iodepth:
                - 1
                - 2
                - 4
                - 6
                - 8
                - 16
                - 32
                - 48
                - 64
                - 96
                - 128
            64k3070:
                jobname: randmix
                mode: randrw
                numjobs:
                - 1
                op_size: 65536
                rwmixread: 30
                total_iodepth:
                - 1
                - 2
                - 3
                - 4
                - 8
```

```
            - 16
            - 32
            - 64
            - 96
            - 128
            - 256
        64k7030:
            jobname: randmix
            mode: randrw
            numjobs:
            - 1
            op_size: 65536
            rwmixread: 70
            total_iodepth:
            - 1
            - 2
            - 3
            - 4
            - 8
            - 16
            - 32
            - 64
            - 96
            - 128
            - 256
        64krandomread:
            jobname: randread
            mode: randread
            numjobs:
            - 1
            op_size: 65536
            total_iodepth:
            - 2
            - 4
            - 6
            - 8
            - 12
            - 16
            - 24
            - 32
            - 64
            - 128
            - 256
            - 384
        64krandomwrite:
            jobname: randwrite
            mode: randwrite
            numjobs:
            - 1
            op_size: 65536
            total_iodepth:
            - 2
            - 4
            - 6
            - 8
            - 16
            - 24
            - 32
            - 64
            - 128
            - 256
            - 384
        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:
        - 4
        - 8
        - 12
        - 16
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
    8krandomread:
        jobname: randread
        mode: randread
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 4
        - 8
        - 12
        - 16
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 588
        - 768
    8krandomwrite:
        jobname: randwrite
        mode: randwrite
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 4
```

```
        - 8
        - 16
        - 32
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
    precondition:
      jobname: precond1rw
      mode: randwrite
      monitor: false
      numjobs:
      - 1
      op_size: 65536
      time: 600
      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
      - 288
    seq16kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 16384
      total_iodepth:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
      - 1024
    seq256kread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
```

```yaml
      op_size: 262144
      total_iodepth:
      - 1
      - 2
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 512
    seq256kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 262144
      total_iodepth:
      - 1
      - 2
      - 4
      - 8
      - 16
      - 24
      - 32
      - 64
      - 96
      - 128
      - 256
    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:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
```

```
        - 512
        - 768
    seq4kread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 2
      - 4
      - 8
      - 12
      - 16
      - 24
      - 32
      - 64
      - 96
      - 128
      - 192
      - 288
      - 384
    seq4kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 2
      - 8
      - 16
      - 24
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
      - 1024
      - 1280
      - 1536
    seq8kread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
      op_size: 8192
      total_iodepth:
      - 2
      - 4
      - 8
      - 12
      - 16
      - 24
      - 32
      - 64
      - 96
      - 128
      - 192
      - 288
```

```
        - 384
      seq8kwrite:
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 8
        - 16
        - 24
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
        - 1024
        - 1280
        - 1536
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: 8
  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: ljsanders
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}

  librbdfio:
    cmd_path: /usr/local/bin/fio2
    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
prefill:
  blocksize: 64k
  numjobs: 1
procs_per_volume:
- 1
ramp: 30
rbdname: cbt-librbdfio
time: 90
time_based: true
use_existing_volumes: true
vol_size: 608333
volumes_per_client:
- 16
workloads:
  16k7030:
    jobname: randmix
    mode: randrw
    numjobs:
    - 1
    op_size: 16384
    rwmixread: 70
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
  16krandomread:
    jobname: randread
    mode: randread
    numjobs:
    - 1
    op_size: 16384
    total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 24
    - 48
    - 64
    - 128
    - 256
    - 384
    - 588
  16krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 16384
```

```
          total_iodepth:
          - 1
          - 2
          - 3
          - 4
          - 8
          - 16
          - 32
          - 64
          - 128
          - 256
          - 384
          - 512
      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
        - 5
        - 6
        - 8
        - 16
        - 24
        - 32
        - 48
      1Mseqread:
        jobname: seqread
        mode: read
        numjobs:
        - 1
        op_size: 1048576
        total_iodepth:
        - 1
        - 2
        - 4
        - 8
        - 12
        - 16
        - 24
```

```
    - 32
    - 48
    - 64
    - 96
    - 128
    - 192
  1Mseqwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 1048576
    total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 16
    - 32
    - 48
    - 64
    - 96
    - 128
    - 160
  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
    - 32
    - 64
    - 96
    - 128
    - 256
  32krandomread:
    jobname: randread
```

```
    mode: randread
    numjobs:
    - 1
    op_size: 32768
    total_iodepth:
    - 2
    - 4
    - 6
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
    - 384
    - 512
  32krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 32768
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 16
    - 32
    - 64
    - 128
    - 256
    - 384
    - 512
  4k7030:
    jobname: randmix
    mode: randrw
    numjobs:
    - 1
    op_size: 4096
    rwmixread: 70
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 16
    - 24
    - 32
    - 64
    - 128
    - 256
    - 384
  4krandomread:
    jobname: randread
    mode: randread
    numjobs:
    - 1
    op_size: 4096
```

```
        total_iodepth:
        - 4
        - 8
        - 12
        - 16
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 588
        - 768
    4krandomwrite:
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 2
      - 4
      - 8
      - 16
      - 32
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
    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
      - 5
      - 6
      - 8
```

```
        - 16
        - 24
        - 32
        - 48
        - 64
    512kseqread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
      op_size: 524288
      total_iodepth:
      - 1
      - 2
      - 4
      - 8
      - 12
      - 16
      - 24
      - 32
      - 48
      - 64
      - 96
      - 128
      - 256
    512kseqwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 524288
      total_iodepth:
      - 1
      - 2
      - 4
      - 6
      - 8
      - 16
      - 32
      - 48
      - 64
      - 96
      - 128
    64k3070:
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 65536
      rwmixread: 30
      total_iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
      - 16
      - 32
      - 64
      - 96
      - 128
      - 256
    64k7030:
```

```
        jobname: randmix
        mode: randrw
        numjobs:
        - 1
        op_size: 65536
        rwmixread: 70
        total_iodepth:
        - 1
        - 2
        - 3
        - 4
        - 8
        - 16
        - 32
        - 64
        - 96
        - 128
        - 256
    64krandomread:
        jobname: randread
        mode: randread
        numjobs:
        - 1
        op_size: 65536
        total_iodepth:
        - 2
        - 4
        - 6
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 128
        - 256
        - 384
    64krandomwrite:
        jobname: randwrite
        mode: randwrite
        numjobs:
        - 1
        op_size: 65536
        total_iodepth:
        - 2
        - 4
        - 6
        - 8
        - 16
        - 24
        - 32
        - 64
        - 128
        - 256
        - 384
    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:
          - 4
          - 8
          - 12
          - 16
          - 32
          - 48
          - 64
          - 128
          - 256
          - 384
          - 512
        8krandomread:
          jobname: randread
          mode: randread
          numjobs:
          - 1
          op_size: 8192
          total_iodepth:
          - 4
          - 8
          - 12
          - 16
          - 32
          - 48
          - 64
          - 128
          - 256
          - 384
          - 588
          - 768
        8krandomwrite:
          jobname: randwrite
          mode: randwrite
          numjobs:
          - 1
          op_size: 8192
          total_iodepth:
          - 2
          - 4
          - 8
          - 16
          - 32
          - 64
          - 128
          - 256
          - 384
```

```
    - 512
    - 768
precondition:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
  - 1
  op_size: 65536
  time: 600
  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
  - 288
seq16kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 16384
  total_iodepth:
  - 2
  - 4
  - 8
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  - 512
  - 768
  - 1024
seq256kread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 262144
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 16
```

```
      - 32
      - 64
      - 128
      - 256
      - 512
   seq256kwrite:
     jobname: seqwrite
     mode: write
     numjobs:
     - 1
     op_size: 262144
     total_iodepth:
     - 1
     - 2
     - 4
     - 8
     - 16
     - 24
     - 32
     - 64
     - 96
     - 128
     - 256
   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:
     - 2
     - 4
     - 8
     - 16
     - 32
     - 64
     - 128
     - 256
     - 512
     - 768
   seq4kread:
     jobname: seqread
     mode: read
     numjobs:
     - 1
```

```
      op_size: 4096
      total_iodepth:
      - 2
      - 4
      - 8
      - 12
      - 16
      - 24
      - 32
      - 64
      - 96
      - 128
      - 192
      - 288
      - 384
    seq4kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 4096
      total_iodepth:
      - 2
      - 8
      - 16
      - 24
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
      - 512
      - 768
      - 1024
      - 1280
      - 1536
    seq8kread:
      jobname: seqread
      mode: read
      numjobs:
      - 1
      op_size: 8192
      total_iodepth:
      - 2
      - 4
      - 8
      - 12
      - 16
      - 24
      - 32
      - 64
      - 96
      - 128
      - 192
      - 288
      - 384
    seq8kwrite:
      jobname: seqwrite
      mode: write
      numjobs:
      - 1
      op_size: 8192
```

```
        total_iodepth:
        - 2
        - 8
        - 16
        - 24
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
        - 1024
        - 1280
        - 1536
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: 8
  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: ljsanders
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```