Comparitive Performance Report for cbt-20thJan-main-rerun-shortened-4k vs cbt-30thJan-alexls19-econ-4k-1vol vs cbt-9thJan-alexls14-4k

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Comparison summary for cbt-20thJan-main-rerun-shortened-4k vs cbt-30thJan-alexls19-econ-4k-1vol vs cbt-9thJan-alexls14-4k

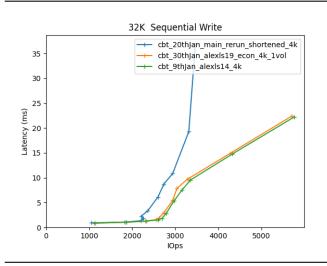
Sequential Write	cbt_20thJan_main_	aletr <u>u i30 t</u> shbart <u>ne nedexl</u> 4 k9_ec	on_ Ak<u>h</u>alwge	$cbt_9thJan_alexls14_4k$	%change
32K 256K	3466@36.9ms $619@10.1ms$	$5707@22.4 \\ 487@4.3$	65% $-21%$	$5759@22.2 \\ 503@6.2$	66% -19%

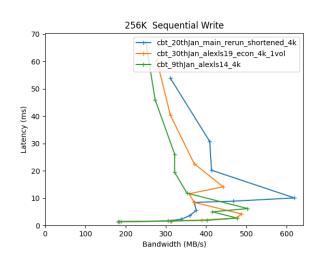
Random Write	cbt_20thJan_main_q	let <u>ru 30tshbartenelekxl</u> 4k9_	econ_ Ækhalwge	$cbt_9thJan_alexls14_4k$	%change
16K	6163@20.8 ms	4640@27.6	-25%	4829@26.5	-22%
32K	4662@27.4ms	3520@36.3	-24%	3592@35.6	-23%
64K	119@2.2ms	182@23.0	53%	186@22.6	56%
256K	$468@35.8\mathrm{ms}$	343@98.0	-27%	353@95.0	-25%

Response Curves Random Write

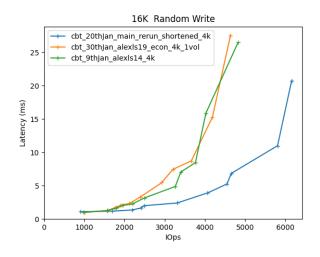
Response Curves

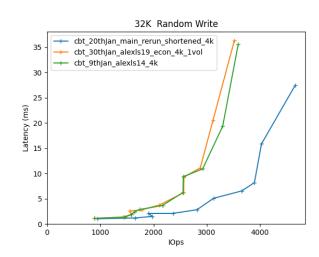
Sequential Write



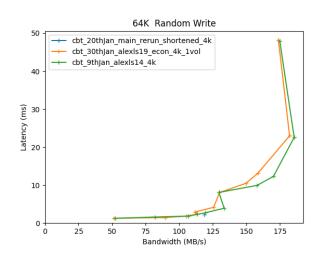


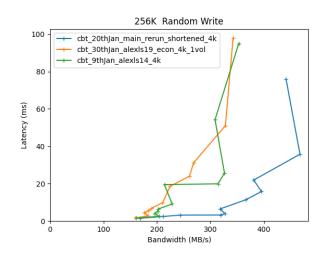
Random Write





Response Curves Random 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/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:
    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
    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
  - 1
  op_size: 262144
32 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
 - 1
  op_size: 32768
precondition:
  iodepth:
  - 4
 jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
 op_size: 65536
 precond: true
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
      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
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}
  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:
      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
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
  - 1
 op_size: 262144
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
  - 1
 op_size: 32768
precondition:
  iodepth:
  - 4
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
 op_size: 65536
 precond: true
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
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
cluster:
  archive_dir: /tmp/cbt
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  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
  - --- server1 ---
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  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
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```

results

```
librbdfio:
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  fio_out_format: json
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  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
      op_size: 16384
      rwmixread: 70
    16krandomread:
      iodepth:
      - 4
      - 8
      - 12
      - 16
      - 24
      - 48
      - 64
      - 128
      - 256
      - 384
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 16384
```

16krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 8 - 16 - 24 - 32 - 64 - 128 jobname: randwrite mode: randwrite numjobs: - 1 op_size: 16384 ${\tt 1Mrandomread:}$ iodepth: - 1 - 2 - 3 - 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 jobname: randread mode: randread numjobs: - 1 op_size: 1048576 1Mrandomwrite: iodepth: - 1 - 2 - 3 - 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 jobname: randwrite mode: randwrite numjobs: - 1 op_size: 1048576 1Mseqread: iodepth: - 1 - 2 - 3 - 4 - 6 - 8 - 10

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

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

```
- 32
  - 64
  - 128
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 4096
512krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 24
  - 32
  - 40
  - 48
  - 64
  jobname: randread
 mode: randread
 numjobs:
  - 1
 op_size: 524288
512krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 24
  - 32
  - 40
  - 48
  - 64
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 524288
512kseqread:
  iodepth:
  - 1
  - 2
   3
  - 4
  - 6
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
 jobname: seqread
 mode: read
 numjobs:
  - 1
  op_size: 524288
512kseqwrite:
```

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

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

- 1

```
op_size: 65536
8krandomread:
  iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  jobname: randread
 mode: randread
 numjobs:
  - 1
  op_size: 8192
{\tt 8krandomwrite:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 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
```

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

```
- 32
  - 64
  - 96
  - 128
  - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
 op_size: 32768
seq32kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 32768
seq4kread:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
 - 96
  - 128
  - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
  op_size: 4096
seq4kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
 - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  - 256
  jobname: seqwrite
 mode: write
 numjobs:
```

```
- 1
        op size: 4096
      seq8kread:
        iodepth:
        - 2
        - 4
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 96
        - 128
        - 192
        jobname: seqread
        mode: read
        numjobs:
        - 1
        op_size: 8192
      seq8kwrite:
        iodepth:
        - 2
        - 4
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 96
        - 128
        - 192
        - 256
        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}
  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
        op_size: 16384
        rwmixread: 70
      16krandomread:
        iodepth:
        - 4
        - 8
        - 12
        - 16
        - 24
        - 48
```

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

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

```
- 24
  - 32
  - 64
  - 128
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
 op_size: 262144
32krandomread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  jobname: randread
 mode: randread
 numjobs:
  - 1
  op_size: 32768
32krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 32768
4krandomread:
  iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
 - 64
  - 128
  - 256
  - 384
  jobname: randread
 mode: randread
 numjobs:
  - 1
  op_size: 4096
4krandomwrite:
```

```
iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 4096
512 krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 24
  - 32
  - 40
  - 48
  - 64
  jobname: randread
 mode: randread
 numjobs:
  - 1
  op_size: 524288
512krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 24
  - 32
  - 40
  - 48
  - 64
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 524288
512kseqread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 12
  - 16
```

```
- 20
  - 24
  - 32
 jobname: seqread
 mode: read
 numjobs:
  - 1
  op_size: 524288
512kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 6
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
 op_size: 524288
64k3070:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randmix
 mode: randrw
 numjobs:
  - 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
  op_size: 65536
```

```
rwmixread: 70
64krandomread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  jobname: randread
 mode: randread
 numjobs:
  - 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
  op_size: 65536
64 kseqread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 16
  - 24
  - 32
 - 64
  - 128
  - 192
  - 256
  jobname: read
 mode: read
 numjobs:
  - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
```

```
- 16
  - 24
  - 32
  - 64
  - 128
 jobname: write
 mode: write
 numjobs:
  - 1
  op_size: 65536
8krandomread:
  iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  jobname: randread
 mode: randread
 numjobs:
  - 1
  op_size: 8192
8krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 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
 op_size: 16384
seq16kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
 - 96
  - 128
  - 192
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 16384
seq256kread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 48
  - 64
 jobname: seqread
 mode: read
 numjobs:
  - 1
  op_size: 262144
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 5
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
```

```
op_size: 262144
seq32kread:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
  jobname: seqread
 mode: read
 numjobs:
  - 1
 op_size: 32768
seq32kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
 op_size: 32768
seq4kread:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 96
  - 128
  - 192
 jobname: seqread
 mode: read
 numjobs:
  - 1
  op_size: 4096
seq4kwrite:
  iodepth:
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
```

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

```
- 16
  - 24
  - 32
  - 64
  - 128
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  - 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
  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 - 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
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
 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
 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
  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
  - 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
  - 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}
  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:
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
  - 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
{\tt 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
  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
 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
  - 1
  op_size: 1048576
{\tt 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
  - 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 - 1 op_size: 262144 32 krandomread: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 32 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
  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
  - 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: 4096
512krandomread:
  iodepth:
  - 1
  - 2
```

- 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 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 op_size: 524288 512kseqread: $\verb"iodepth":$ - 1 - 2 - 3 - 4 - 6 - 8 - 12 - 16 - 20

```
- 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
  - 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
  - 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:
  - 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
 - 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
{\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
  - 1
  - 1
  op_size: 32768
{\tt seq 32kwrite:}
  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
  - 1
  op_size: 32768
{\tt 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
```

```
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
        - 1
        - 1
        op_size: 8192
      {\tt 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 -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}
```