$\begin{array}{c} Performance\ Report\ for \\ cbt-17thJul-16k-ecopt2-o01-6+2 \end{array}$

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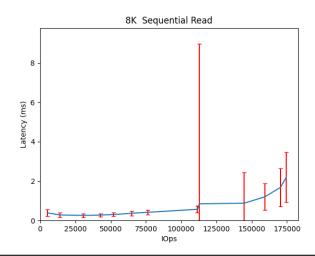
Summary of results for ${\rm cbt}\text{-}17{\rm thJul}\text{-}16{\rm k}\text{-}{\rm ecopt2}\text{-}{\rm o}01\text{-}6\text{+}2$

Workload Name	Maximum Throughput	Latency (ms)
8192_read	174519 IOps	2.2
8192_write	119795 IOps	12.8
8192_randread	106380 IOps	7.2
8192_randwrite	10689 IOps	71.8
65536_70_30_randrw	$1323~\mathrm{MB/s}$	12.7
65536_30_70_randrw	$782~\mathrm{MB/s}$	21.4

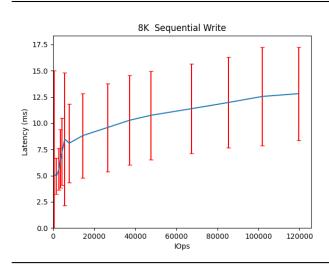
Response Curves Random Read

Response Curves

Sequential Read

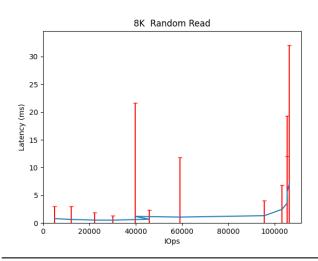


Sequential Write

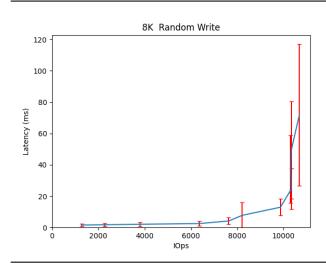


Random Read

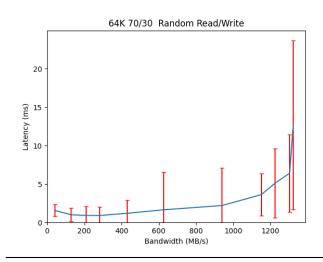
Response Curves Random Read/Write

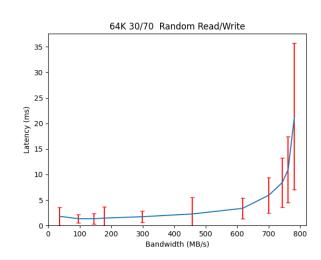


Random Write



Random Read/Write





Configuration yaml

```
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: config_ceph_replicated
  prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  rbdname: config-ceph
  time: 90
  time_based: true
  use_existing_volumes: true
  vol_size: 1368750
  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:
  - 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:
  - 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
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 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:
  - 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:
  - 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
{\tt seq 32kwrite:}
  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:
  - 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:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```