Comparitive Performance Report for cbt-19thJan-main-4k-8vol vs cbt-28thJan-alexls17-econ-4k-8vol-reverse-3min vs cbt-29thJan-alexls19-econ-4k-8vol-3min

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Comparison summary for cbt-19thJan-main-4k-8vol vs cbt-28thJan-alexls17-econ-4k-8vol-reverse-3min vs cbt-29thJan-alexls19-econ-4k-8vol-3min

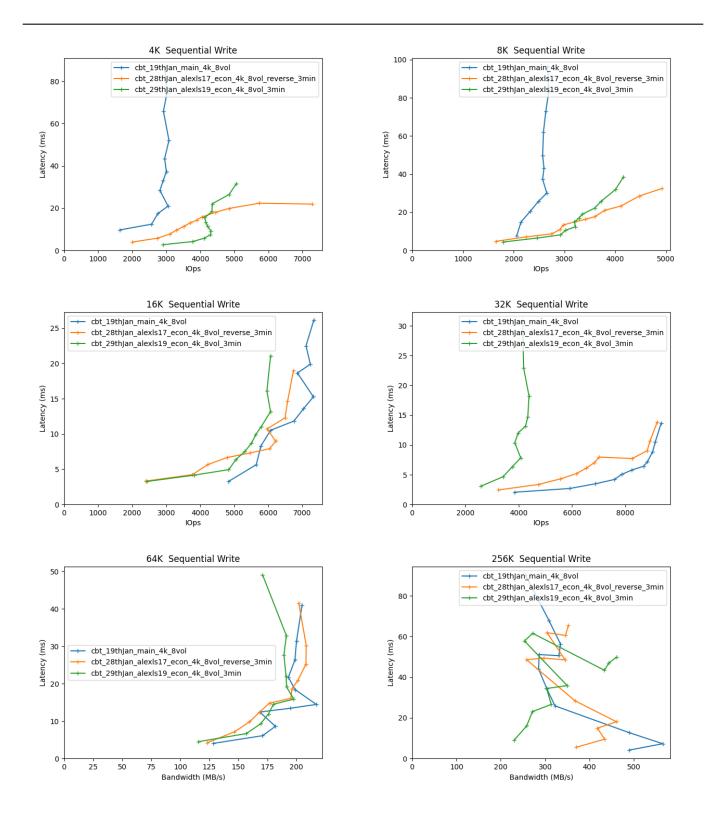
Sequential Write	cbt_19thJan_main_c4kt	286 hJan_alexls17	_econ_ %kchaswge _	rechetrs 296 molian_alexls 19	econ %4k:ha8nvgd 3
$\overline{4K}$	3077@52.1ms	7292@21.9	137%	5056@31.6	64%
8K	2694@83.5 ms	4923@32.5	83%	4162@38.4	54%
16K	7338@26.1ms	6740@19.0	-8%	6069@21.1	-17%
32K	9342@13.7 ms	9196@13.9	-2%	4384@18.2	-53%
64K	217@14.5 ms	208@30.1	-4%	198@15.9	-9%
256K	565@7.3 ms	461@18.1	-18%	462@49.8	-18%
512K	483@95.4ms	465@53.9	-4%	484@95.0	0%
1024K	$513@64.9\mathrm{ms}$	475@87.7	-7%	501@183.9	-2%

Random Write	cbt_19thJan_main_c4ht	286 hJan_alexls17	_econ_ %4kcha8nvgde _	rechetr <u>se29</u> 63mJian_alexls19	_econ_ %kchaswge _3min
4K	2708@35.4ms	3296@38.8	22%	3738@34.2	38%
8K	2758@46.4ms	3734@34.3	35%	3618@35.4	31%
16K	5674@22.5 ms	4827@13.2	-15%	5008@25.5	-12%
32K	3530@36.3ms	3579@26.8	1%	3335@38.4	-6%
64K	199@31.5ms	240@10.8	21%	305@27.4	53%
256K	415@50.4ms	421@14.8	1%	449@74.6	8%
512K	466@80.7 ms	466@80.8	0%	475@88.1	2%
1024K	478@139.8ms	472@177.5	-1%	484@155.7	1%

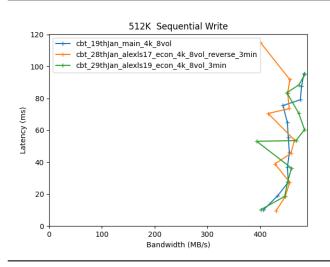
Random Read/Write	cbt_19thJan_main_clkt	286 hJan_alexls17	econ Akhange	rechetrs@96mdian_alex1s19	econ_ %kkh&wge _3min
$16K_{70}/30$	7664@7.3 ms	5639@14.2	-26%	5516@14.5	-28%
$64K_{-70}/30$	$304@27.6\mathrm{ms}$	282@20.5	-7%	299@15.8	-2%
$64 \text{K}_30/70$	246@17.0 ms	245@17.1	-0%	219@26.3	-11%

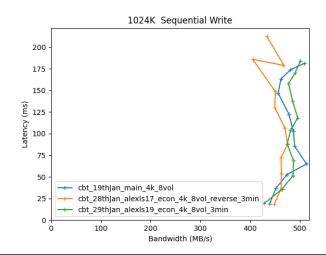
Response Curves

Sequential Write



Random Write Response Curves





Random Write

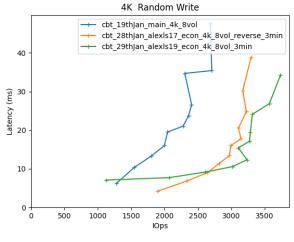
25

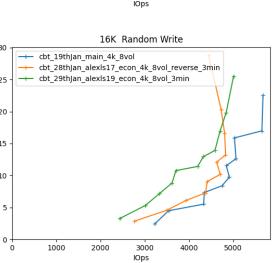
20

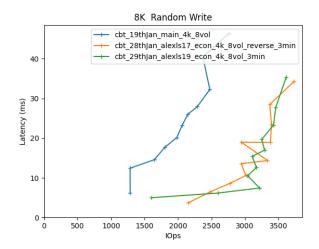
10

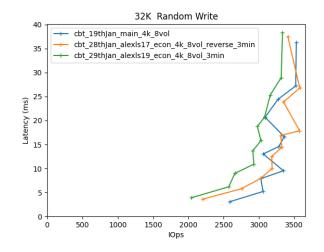
5

Latency (ms) 15

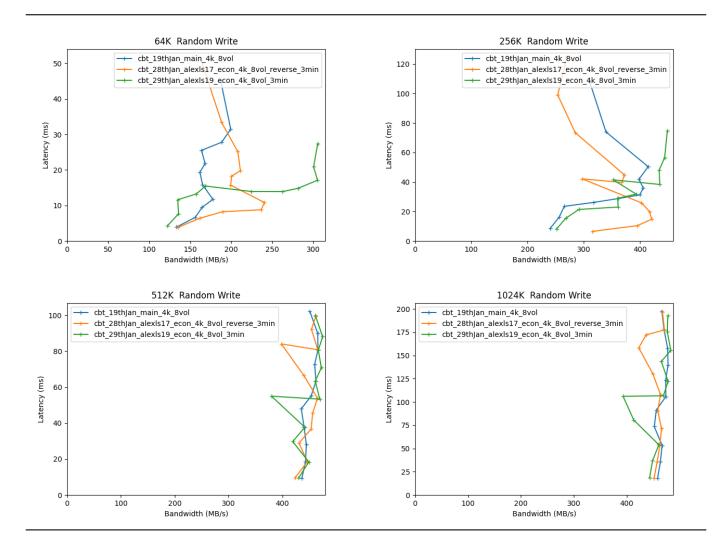




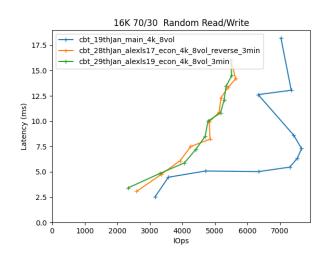


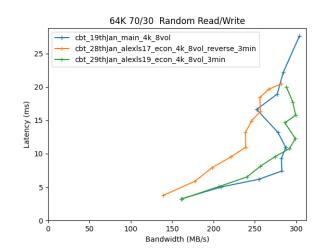


Response Curves Random Read/Write

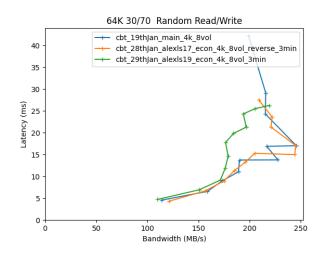


Random Read/Write





Response Curves 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/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: 52500
  volumes_per_client:
  - 8
  workloads:
    16k7030:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 10
      - 12
      - 16
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      - 1
      op size: 16384
      rwmixread: 70
    16krandomread:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 8
```

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

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

256krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 10 - 12 - 16 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 - 10 - 12 - 16 - 20 - 24 - 28 - 32 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

```
- 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
4krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 20
  - 24
  - 32
  - 48
  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
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  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
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 524288
512krandomwrite:
 iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
 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
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
 - 11
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
 op_size: 524288
512kseqwrite:
 iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
 - 9
  - 10
  - 11
  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 - 6 - 7 - 8 - 10 - 12 - 16 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 - 6 - 7 - 8 - 10 - 12 - 16 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 - 10 - 12 - 16 - 20 - 24 - 28 - 32 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 - 6 - 7 - 8 - 10 - 12 - 16 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64kseqread: $\verb"iodepth":$ - 2 - 4 - 6 - 8 - 10 - 12 - 16 - 20 - 24

```
- 32
  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
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: write
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 65536
8krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
  - 48
  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
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 8192
precondition:
  iodepth:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
  - 1
  op_size: 65536
  precond: true
seq16kread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
  - 18
  - 20
  - 24
  jobname: seqread
  mode: read
  numjobs:
```

```
- 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 16384
seq16kwrite:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
  - 18
  - 20
  - 24
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 16384
{\tt seq256kread:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: seqread
  mode: read
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
```

```
- 1
  - 1
  - 1
  - 1
 op_size: 262144
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
 - 9
  - 10
  - 11
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
 op_size: 262144
seq32kread:
  iodepth:
  - 2
  - 4
  - 8
  - 10
  - 12
  - 14
  - 16
  - 18
  - 20
  - 22
  - 24
  jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
seq32kwrite:
```

iodepth:

```
- 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
 - 8
  - 10
  - 12
  - 16
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 32768
seq4kread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
 - 12
 - 14
  - 16
  - 18
  - 20
 - 24
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 4096
seq4kwrite:
  iodepth:
  - 2
  - 4
  - 6
 - 8
 - 10
  - 12
  - 14
```

```
- 16
  - 20
  - 24
  - 28
  - 32
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
 op_size: 4096
seq8kread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
 - 16
  - 18
  - 20
 - 24
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
 op_size: 8192
seq8kwrite:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
 - 20
 - 24
  - 28
```

```
jobname: seqwrite
        mode: write
        numjobs:
        - 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:
- 1
ramp: 30
time: 60
time_based: true
use_existing_volumes: true
vol_size: 52500
volumes_per_client:
- 8
workloads:
  16k7030:
    iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
    jobname: randmix
    mode: randrw
    numjobs:
    - 1
    - 1
    - 1
    - 1
    - 1
    - 1
    - 1
    - 1
    - 1
    - 1
    - 1
    op_size: 16384
    rwmixread: 70
  16krandomread:
    iodepth:
    - 1
    - 2
    - 3
    - 4
    - 8
    - 12
    - 16
    - 20
    - 24
    - 32
    - 48
    jobname: randread
    mode: randread
    numjobs:
    - 1
    - 1
    - 1
    - 1
    - 1
```

```
- 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 16384
{\tt 16krandomwrite:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 16384
1Mrandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randread
  mode: randread
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 1048576
```

1Mrandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 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 - 5 - 6 - 7 - 8 - 9 - 10 - 11 jobname: seqread mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 1048576 1Mseqwrite: iodepth: - 1 - 2 - 3 - 4 - 5

```
- 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 1048576
256krandomread:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randread
  mode: randread
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 262144
{\tt 256krandomwrite:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  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
  - 10
  - 12
  - 16
  - 20
  - 24
  - 28
  - 32
  jobname: randread
  mode: randread
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
32 krandom write:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
```

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

op_size: 4096

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

```
- 6
  - 7
  - 8
  - 9
  - 10
  - 11
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 524288
512kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
 - 11
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 524288
64k3070:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  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
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  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
  - 10
  - 12
  - 16
 - 20
  - 24
  - 28
  - 32
 jobname: randread
 mode: randread
 numjobs:
  - 1
  - 1
  - 1
```

- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64krandomwrite: iodepth: - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 10 - 12 - 16 jobname: randwrite mode: randwrite numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 op_size: 65536 64kseqread: iodepth: - 2 - 4 - 6 - 8 - 10 - 12 - 16 - 20 - 24 - 28 - 32 jobname: read mode: read numjobs: - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1

```
- 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: write
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 65536
{\tt 8krandomread:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 12
  - 16
  - 20
  - 24
  - 32
  - 48
  jobname: randread
  mode: randread
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 8192
8krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
```

```
- 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 8192
precondition:
  iodepth:
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
 op_size: 65536
 precond: true
seq16kread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
  - 18
  - 20
  - 24
  jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 16384
seq16kwrite:
  iodepth:
```

```
- 2
  - 4
  - 6
  - 8
  - 10
 - 12
 - 14
 - 16
 - 18
  - 20
 - 24
 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
  - 6
  - 7
  - 8
  - 9
  - 10
 - 11
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 262144
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
```

```
- 8
  - 9
  - 10
 - 11
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
 op_size: 262144
seq32kread:
  iodepth:
  - 2
  - 4
  - 8
  - 10
  - 12
  - 14
  - 16
  - 18
  - 20
  - 22
  - 24
  jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
seq32kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  jobname: seqwrite
 mode: write
 numjobs:
```

```
- 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 32768
seq4kread:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
  - 18
  - 20
  - 24
  jobname: seqread
  mode: read
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
  op_size: 4096
{\tt seq4kwrite:}
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
  - 14
  - 16
  - 20
  - 24
  - 28
  - 32
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
```

```
- 1
  - 1
  - 1
  - 1
  - 1
  - 1
 op_size: 4096
seq8kread:
  iodepth:
  - 4
  - 6
  - 8
  - 10
 - 12
 - 14
 - 16
  - 18
 - 20
 - 24
 jobname: seqread
 mode: read
 numjobs:
  - 1
  - 1
  - 1
  - 1
  - 1
  - 1
 - 1
  - 1
  - 1
  - 1
 op_size: 8192
seq8kwrite:
  iodepth:
  - 2
  - 4
  - 6
  - 8
  - 10
  - 12
 - 14
 - 16
 - 20
 - 24
  - 28
  - 32
 jobname: seqwrite
 mode: write
 numjobs:
  - 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
    --- 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}
```

${\bf results_old}$

```
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: 180
  time_based: true
  use_existing_volumes: true
  vol_size: 52500
  volumes_per_client:
  - 8
  workloads:
    16k7030:
      iodepth:
      - 11
      - 10
      - 9
      - 8
      - 7
      - 6
      - 5
      - 4
      - 3
      - 2
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 16384
      rwmixread: 70
    16krandomwrite:
      iodepth:
      - 16
      - 12
      - 10
      - 8
      - 7
      - 6
      - 5
      - 4
      - 3
      - 2
      - 1
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
```

```
op_size: 16384
1Mrandomwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 1048576
1Mseqwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
 - 1
 op_size: 1048576
256krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 262144
32krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
```

```
- 5
  - 4
  - 3
  - 2
  - 1
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 32768
4krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
  mode: randwrite
 numjobs:
  - 1
  op_size: 4096
512krandomwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
 jobname: randwrite
 mode: randwrite
 numjobs:
  op_size: 524288
512kseqwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
```

```
op_size: 524288
64k3070:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randmix
 mode: randrw
 numjobs:
  - 1
 op_size: 65536
 rwmixread: 30
64k7030:
 iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randmix
 mode: randrw
 numjobs:
 - 1
 op_size: 65536
 rwmixread: 70
64krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
 op_size: 65536
64kseqwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
```

```
- 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: write
  mode: write
 numjobs:
  - 1
  op_size: 65536
8krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 8192
precondition:
  iodepth:
  - 2
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
 op_size: 65536
 precond: true
seq16kwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
 op_size: 16384
seq256kwrite:
 iodepth:
  - 11
  - 10
  - 9
```

```
- 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 262144
seq32kwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 32768
seq4kwrite:
  iodepth:
  - 20
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 4096
seq8kwrite:
  iodepth:
  - 20
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
```

```
- 1
        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
  - --- 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: 180
    time_based: true
    use_existing_volumes: true
    vol_size: 52500
```

```
volumes_per_client:
- 8
workloads:
  16k7030:
    iodepth:
    - 11
    - 10
    - 9
    - 8
    - 7
    - 6
    - 5
    - 4
    - 3
    - 2
    - 1
    jobname: randmix
    mode: randrw
    numjobs:
    - 1
    op_size: 16384
    rwmixread: 70
  16krandomwrite:
    iodepth:
    - 16
    - 12
    - 10
    - 8
    - 7
    - 6
    - 5
    - 4
    - 3
    - 2
    - 1
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 16384
  1Mrandomwrite:
    iodepth:
    - 11
    - 10
    - 9
    - 8
    - 7
    - 6
    - 5
    - 4
    - 3
    - 2
    - 1
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 1048576
  1Mseqwrite:
    iodepth:
    - 11
    - 10
    - 9
```

```
- 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 1048576
256krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 262144
32krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 32768
{\tt 4krandomwrite:}
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
```

```
mode: randwrite
 numjobs:
  - 1
  op_size: 4096
512krandomwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
 mode: randwrite
 numjobs:
 - 1
 op_size: 524288
512kseqwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
 op_size: 524288
64k3070:
 iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
 jobname: randmix
 mode: randrw
 numjobs:
  - 1
 op_size: 65536
 rwmixread: 30
64k7030:
 iodepth:
  - 11
  - 10
```

```
- 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randmix
 mode: randrw
 numjobs:
  - 1
 op_size: 65536
 rwmixread: 70
64krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: write
 mode: write
 numjobs:
  - 1
  op_size: 65536
8krandomwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
```

```
- 1
  jobname: randwrite
 mode: randwrite
 numjobs:
 - 1
  op_size: 8192
precondition:
  iodepth:
  - 2
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
  op_size: 65536
 precond: true
seq16kwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 16384
seq256kwrite:
  iodepth:
  - 11
  - 10
  - 9
  - 8
  - 7
  - 6
  - 5
  - 4
  - 3
  - 2
  - 1
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 262144
seq32kwrite:
  iodepth:
  - 16
  - 12
  - 10
  - 8
  - 7
  - 6
  - 5
  - 4
```

```
- 2
        - 1
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 32768
      seq4kwrite:
        iodepth:
        - 20
        - 16
        - 12
        - 10
        - 8
        - 7
        - 6
        - 5
        - 4
        - 3
        - 2
        - 1
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 4096
      seq8kwrite:
        iodepth:
        - 20
        - 16
        - 12
        - 10
        - 8
        - 7
        - 6
        - 5
        - 4
        - 3
        - 2
        - 1
        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}
```

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: 180
  time_based: true
  use_existing_volumes: true
  vol_size: 52500
  volumes_per_client:
  - 8
  workloads:
    16k7030:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 9
      - 10
      - 11
      jobname: randmix
      mode: randrw
      numjobs:
      - 1
      op_size: 16384
      rwmixread: 70
    16krandomwrite:
      iodepth:
      - 1
      - 2
      - 3
      - 4
      - 5
      - 6
      - 7
      - 8
      - 10
      - 12
      - 16
      jobname: randwrite
      mode: randwrite
      numjobs:
      - 1
```

```
op_size: 16384
1Mrandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 1048576
1Mseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: seqwrite
 mode: write
 numjobs:
 - 1
 op_size: 1048576
256krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 262144
32krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
```

```
- 7
  - 8
  - 10
  - 12
  - 16
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 32768
4krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
  mode: randwrite
 numjobs:
  - 1
  op_size: 4096
512krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
 jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 524288
512kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
```

```
op_size: 524288
64k3070:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randmix
 mode: randrw
 numjobs:
  - 1
 op_size: 65536
 rwmixread: 30
64k7030:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randmix
 mode: randrw
 numjobs:
 - 1
 op_size: 65536
 rwmixread: 70
64krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
```

```
- 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: write
  mode: write
 numjobs:
  - 1
  op_size: 65536
{\tt 8krandomwrite:}
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 8192
precondition:
  iodepth:
  - 2
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
 op_size: 65536
 precond: true
seq16kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
 op_size: 16384
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
```

```
- 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 262144
seq32kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 32768
seq4kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  - 20
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 4096
seq8kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
 - 10
  - 12
```

```
- 20
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 8192
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  fs: xfs
  head: --- server1 ---
  iterations: 1
  mgrs:
   --- server1 ---:
     a: null
  mkfs_opts: -f -i size=2048
  mons:
    --- server1 ---:
      a: --- IP Address --:6789
  mount_opts: -o inode64,noatime,logbsize=256k
  - --- 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: 180
    time_based: true
    use_existing_volumes: true
    vol_size: 52500
```

```
volumes_per_client:
- 8
workloads:
  16k7030:
    iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
    jobname: randmix
    mode: randrw
    numjobs:
    - 1
    op_size: 16384
    rwmixread: 70
  16krandomwrite:
    iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 10
    - 12
    - 16
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 16384
  1Mrandomwrite:
    iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 1048576
  1Mseqwrite:
    iodepth:
    - 1
    - 2
    - 3
```

```
- 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 1048576
256krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 262144
32krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 32768
4krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
```

```
mode: randwrite
 numjobs:
  - 1
  op_size: 4096
512krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randwrite
 mode: randwrite
 numjobs:
 - 1
 op_size: 524288
512kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
 jobname: seqwrite
 mode: write
 numjobs:
  - 1
 op_size: 524288
64k3070:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
 jobname: randmix
 mode: randrw
 numjobs:
  - 1
 op_size: 65536
 rwmixread: 30
64k7030:
  iodepth:
  - 1
  - 2
```

```
- 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
  - 11
  jobname: randmix
 mode: randrw
 numjobs:
  - 1
 op_size: 65536
 rwmixread: 70
64krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 65536
64kseqwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: write
 mode: write
 numjobs:
  - 1
  op_size: 65536
8krandomwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
```

```
- 16
  jobname: randwrite
 mode: randwrite
 numjobs:
  - 1
  op_size: 8192
precondition:
  iodepth:
  - 2
  jobname: precond1rw
 mode: randwrite
 monitor: false
 numjobs:
  - 1
  op_size: 65536
 precond: true
seq16kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
  - 12
  - 16
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 16384
seq256kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10
 - 11
  jobname: seqwrite
 mode: write
 numjobs:
  - 1
  op_size: 262144
seq32kwrite:
  iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 10
```

```
- 12
        - 16
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 32768
      {\tt seq4kwrite:}
        iodepth:
        - 1
        - 2
        - 3
        - 4
        - 5
        - 6
        - 7
        - 8
        - 10
        - 12
        - 16
        - 20
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 4096
      seq8kwrite:
        iodepth:
        - 1
        - 2
        - 3
        - 4
        - 5
        - 6
        - 7
        - 8
        - 10
        - 12
        - 16
        - 20
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 8192
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  fs: xfs
 head: --- server1 ---
  iterations: 1
  mgrs:
    --- server1 ---:
      a: null
  mkfs_opts: -f -i size=2048
```

```
mons:
    --- server1 ---:
     a: --- IP Address --:6789
 mount_opts: -o inode64,noatime,logbsize=256k
  osds:
  - --- server1 ---
 osds_per_node: 6
  pdsh_ssh_args: -a -x -l%u %h
  rados_cmd: /usr/bin/rados
  rbd_cmd: /usr/bin/rbd
  tmp_dir: /tmp/cbt
 use_existing: true
 user: root
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```