# Comparitive Performance Report for cbt-18thJan-alex-ec-switcher-4k-1vol vs cbt-17thDec-main-4k

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# Comparison summary for cbt-18thJan-alex-ec-switcher-4k-1vol vs cbt-17thDec-main-4k

| Sequential Read | cbt_17thDec_main_4k | cbt_18thJan_alex_ec_switcher_4k_1vol |
|---|---|---|
| 4K | 25339 IOps@7.6ms | 24973 IOps@7.7ms |
| 8K | 17196 IOps@11.2ms | 16622 IOps@11.5ms |
| 16K | 10428 IOps@18.4ms | 10573 IOps@18.2ms |
| 32K | 11409 IOps@16.8ms | 11563 IOps@16.6ms |
| 64K | 977 MB/s@17.2ms | 981 MB/s@17.1ms |
| 256K | 1495 MB/s@11.2ms | 1492 MB/s@11.2ms |
| 512K | 1501 MB/s@11.2ms | 1501 MB/s@11.2ms |
| 1024K | 1533 MB/s@13.7ms | 1528 MB/s@13.7ms |

| Sequential Write | cbt_17thDec_main_4k | cbt_18thJan_alex_ec_switcher_4k_1vol |
|---|---|---|
| 4K | 2024 IOps@126.4ms | 2101 IOps@121.8ms |
| 8K | 2019 IOps@126.6ms | 2014 IOps@127.0ms |
| 16K | 5117 IOps@37.5ms | 5354 IOps@35.8ms |
| 32K | 3621 IOps@35.3ms | 6219 IOps@20.6ms |
| 64K | 196 MB/s@42.8ms | 209 MB/s@40.2ms |
| 256K | 400 MB/s@31.3ms | 364 MB/s@2.1ms |
| 512K | 439 MB/s@28.5ms | 438 MB/s@14.2ms |
| 1024K | 472 MB/s@26.3ms | 467 MB/s@35.6ms |

| Random Read | cbt_17thDec_main_4k | cbt_18thJan_alex_ec_switcher_4k_1vol |
|---|---|---|
| 4K | 95501 IOps@4.0ms | 95410 IOps@4.0ms |
| 8K | 60546 IOps@6.3ms | 60017 IOps@6.4ms |
| 16K | 34618 IOps@11.1ms | 34391 IOps@11.2ms |
| 32K | 31326 IOps@4.1ms | 31270 IOps@8.2ms |
| 64K | 1642 MB/s@10.2ms | 1628 MB/s@5.1ms |
| 256K | 1680 MB/s@20.0ms | 1696 MB/s@19.8ms |
| 512K | 1698 MB/s@19.8ms | 1705 MB/s@19.7ms |
| 1024K | 1709 MB/s@19.6ms | 1710 MB/s@19.6ms |

| Random Write | cbt_17thDec_main_4k | cbt_18thJan_alex_ec_switcher_4k_1vol |
|---|---|---|
| 4K | 2897 IOps@44.2ms | 2874 IOps@44.5ms |
| 8K | 2791 IOps@45.9ms | 2427 IOps@52.8ms |
| 16K | 5726 IOps@22.3ms | 5075 IOps@25.2ms |
| 32K | 3245 IOps@39.4ms | 3981 IOps@32.1ms |
| 64K | 193 MB/s@21.7ms | 199 MB/s@42.1ms |
| 256K | 335 MB/s@100.2ms | 400 MB/s@83.9ms |
| 512K | 464 MB/s@72.2ms | 489 MB/s@68.5ms |
| 1024K | 472 MB/s@35.2ms | 496 MB/s@67.3ms |

Comparison summary for cbt-18thJan-alex-ec-switcher-4k-1vol vs cbt-17thDec-main-4k

| Random Read/Write | cbt_17thDec_main_4k | cbt_18thJan_alex_ec_switcher_4k_1vol |
|---|---|---|
| 16K_70/30 | 6191 IOps@20.7ms | 7299 IOps@17.5ms |
| 64K_70/30 | 288 MB/s@29.2ms | 302 MB/s@27.7ms |
| 64K_30/70 | 166 MB/s@12.6ms | 188 MB/s@8.4ms |

# Response Curves

## Sequential Read

512K Sequential Read



1024K Sequential Read

# Sequential Write



4K Sequential Write



8K Sequential Write



16K Sequential Write
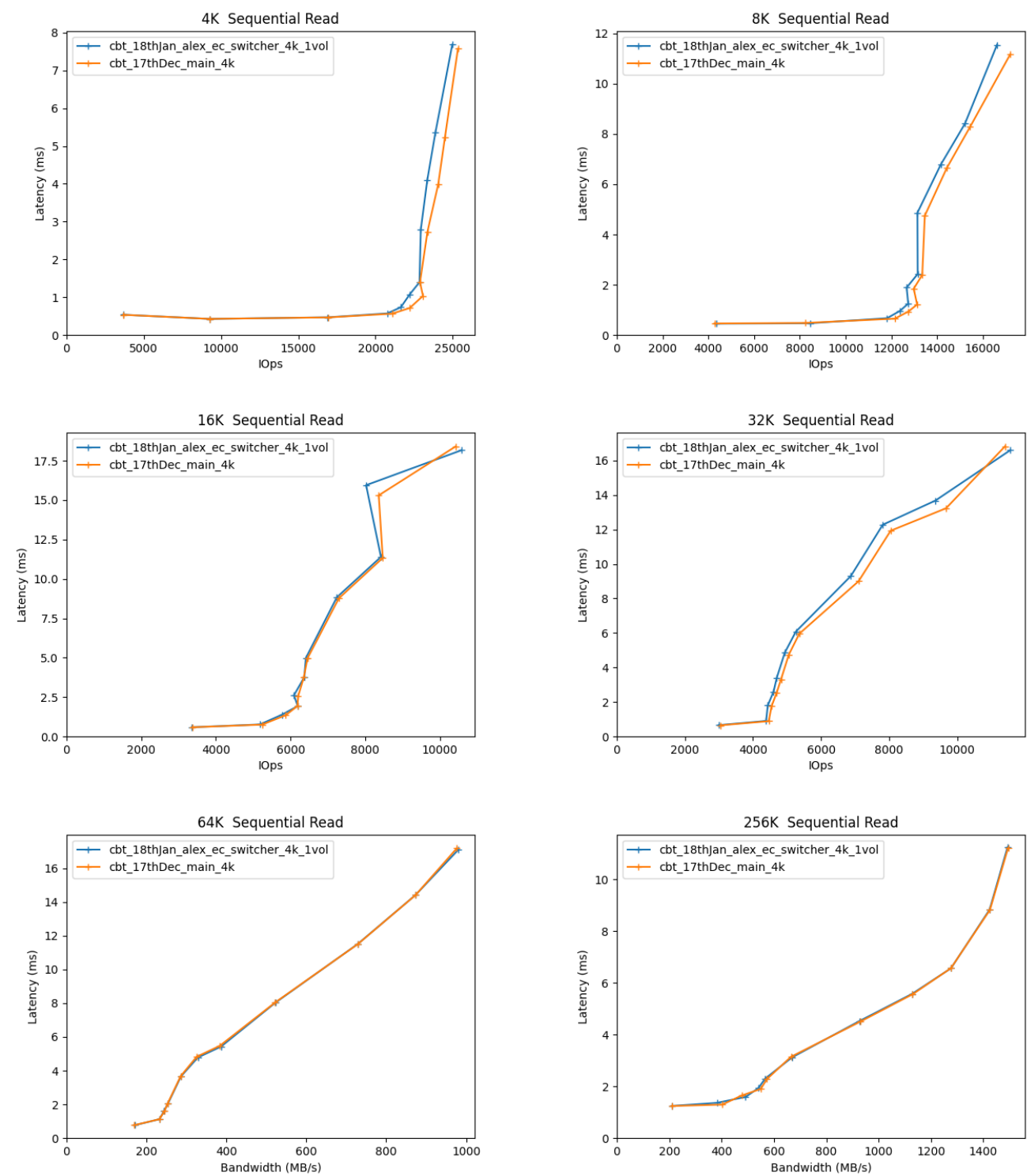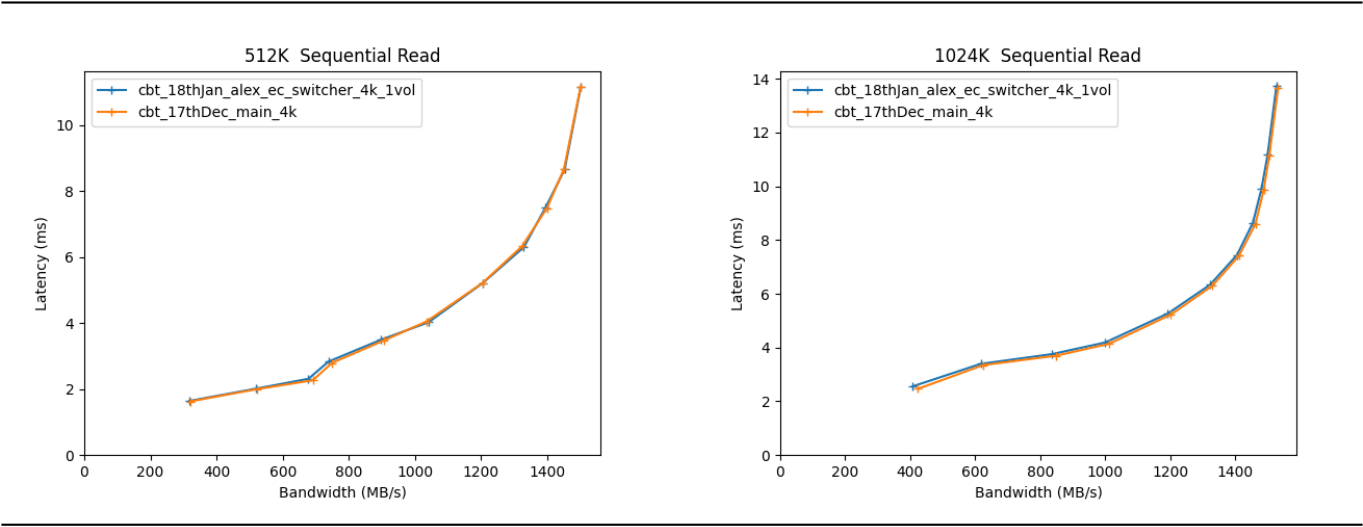


32K Sequential Write

## Random Read

## 16K  Random Read



## 32K  Random Read



## 64K  Random Read



## 256K  Random Read



## 512K  Random Read
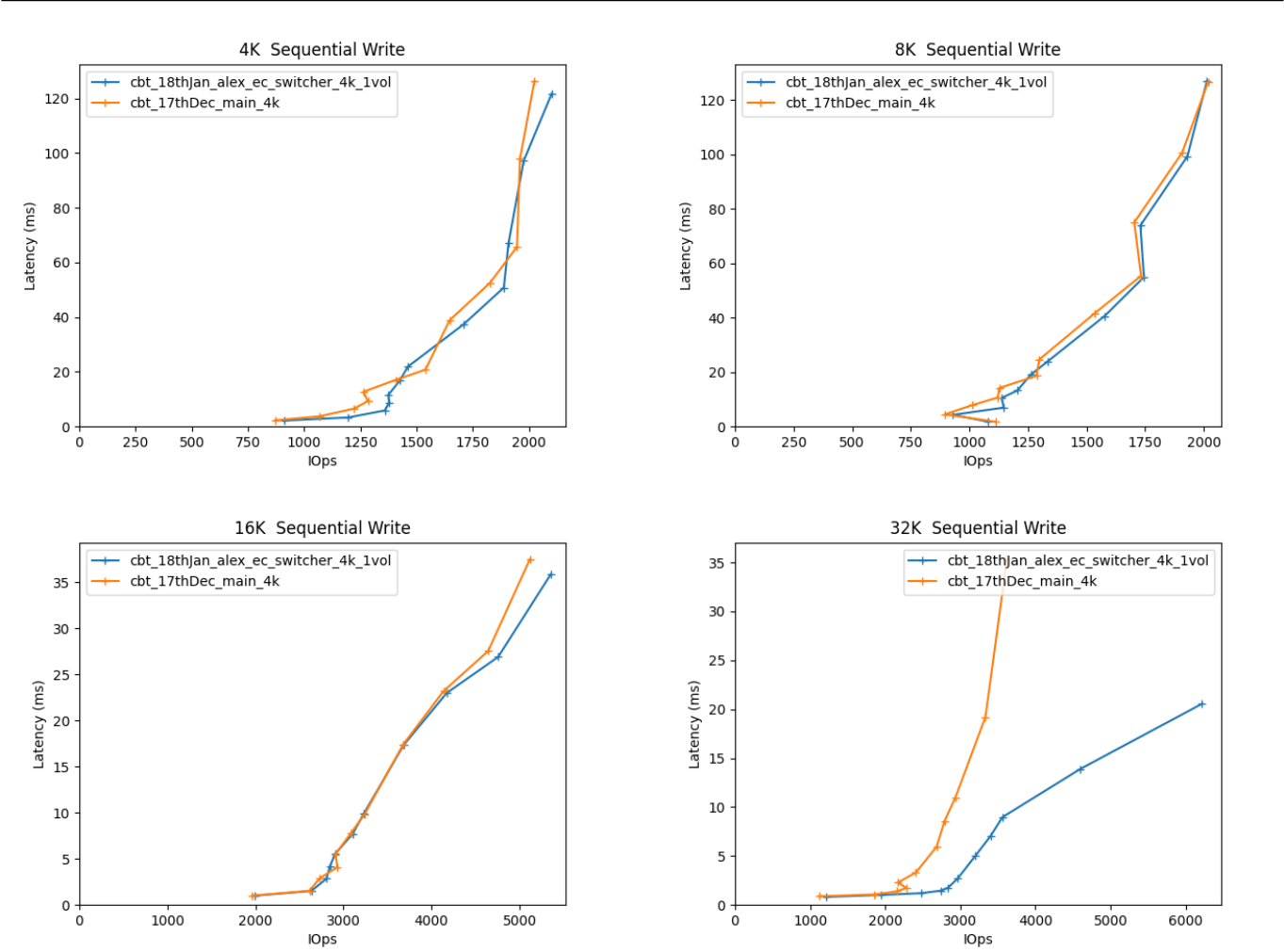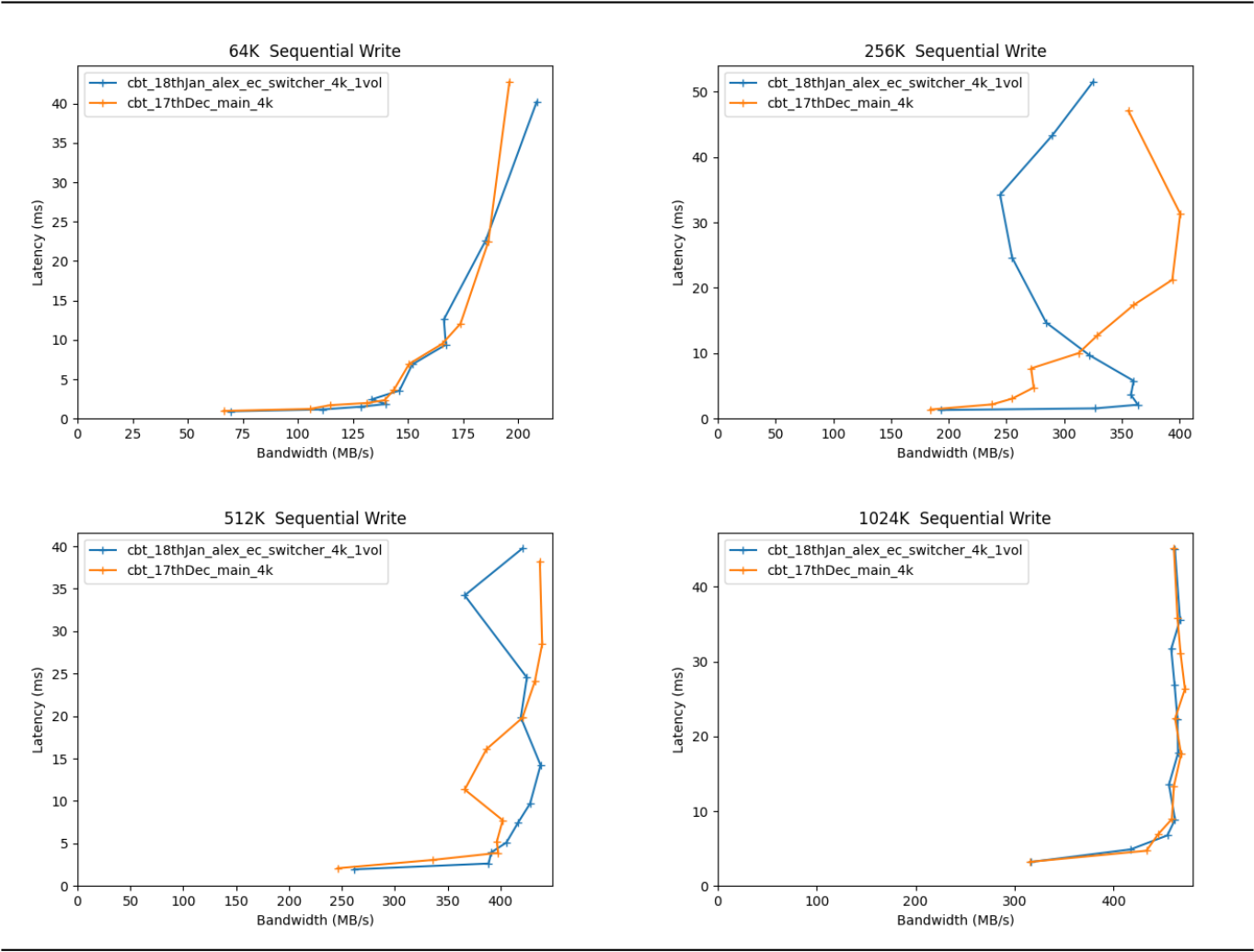


## 1024K  Random Read



# Random Write

## 4K  Random Write



## 8K  Random Write



## 16K  Random Write



## 32K  Random Write



## 64K  Random Write



## 256K  Random Write

512K Random Write
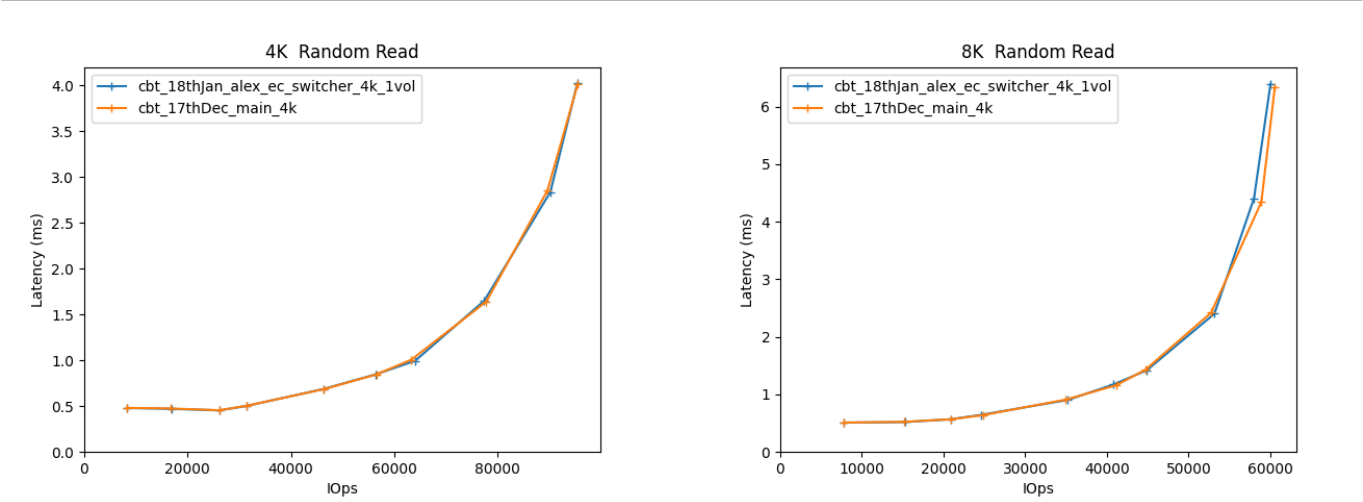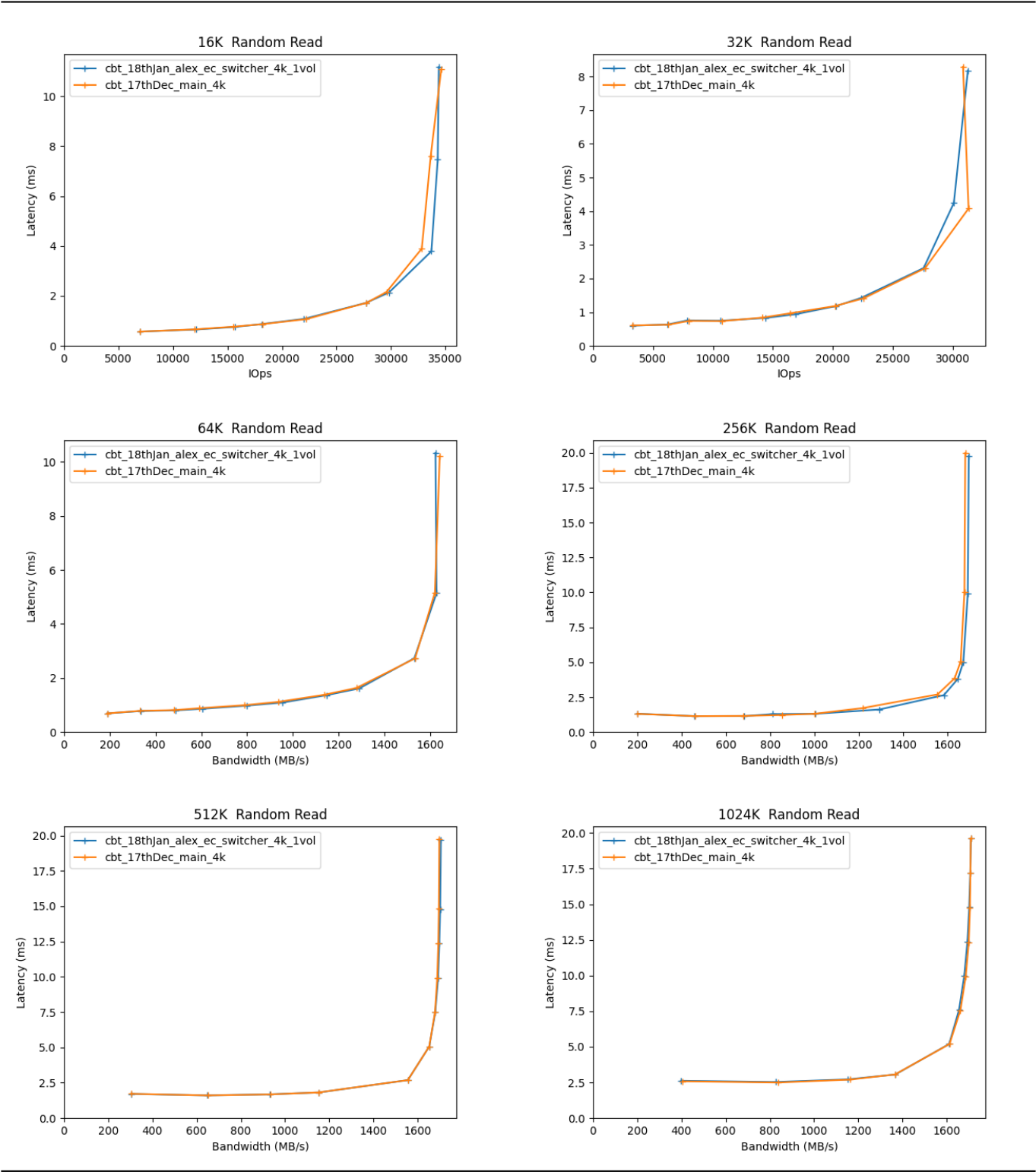
1024K Random Write

# Random Read/Write



16K 70/30 Random Read/Write

64K 70/30 Random Read/Write
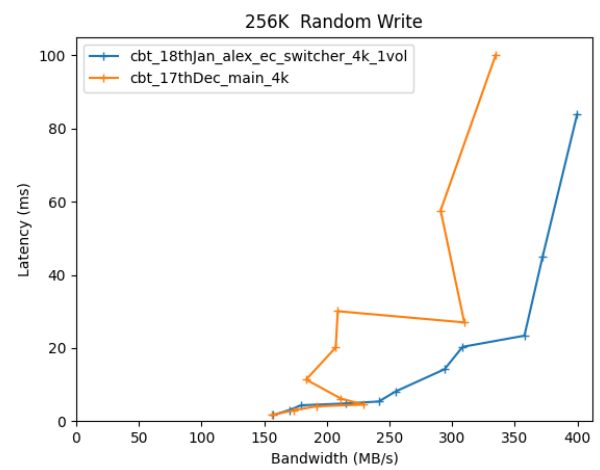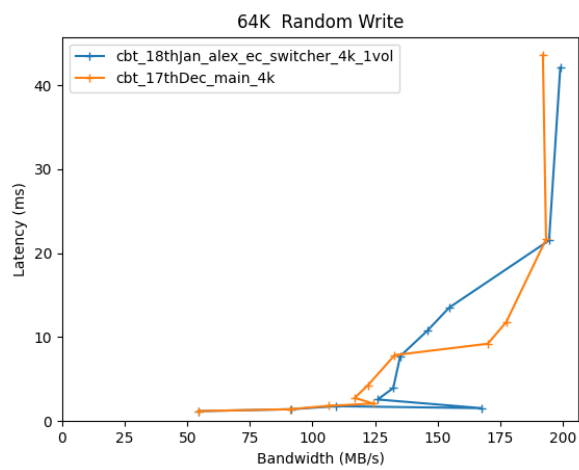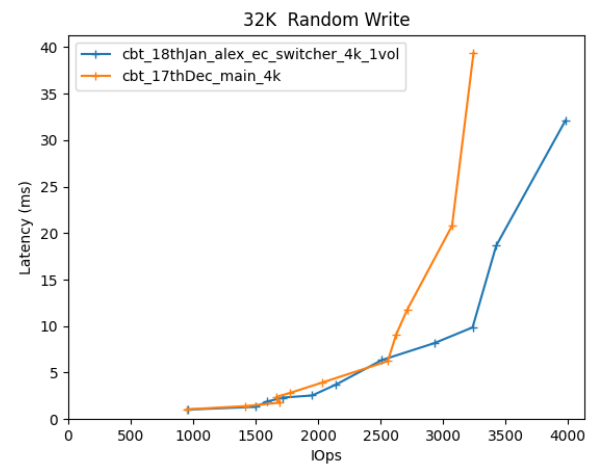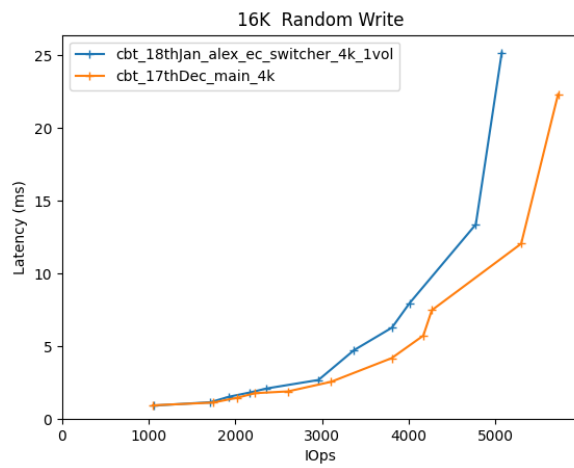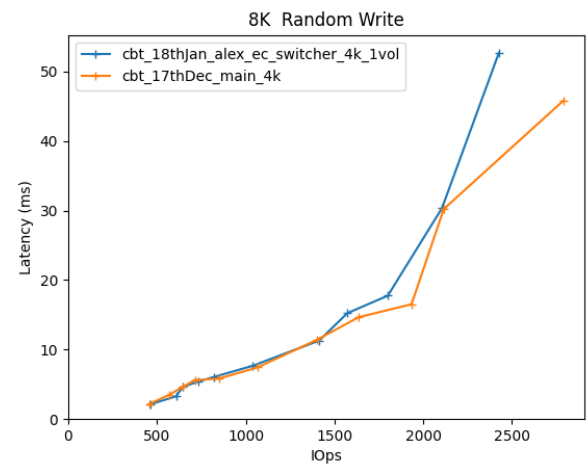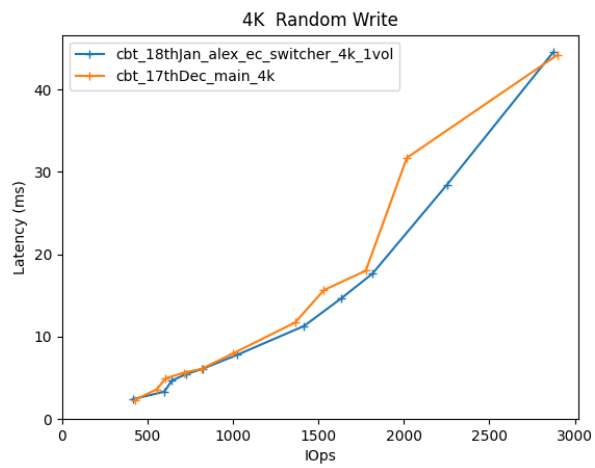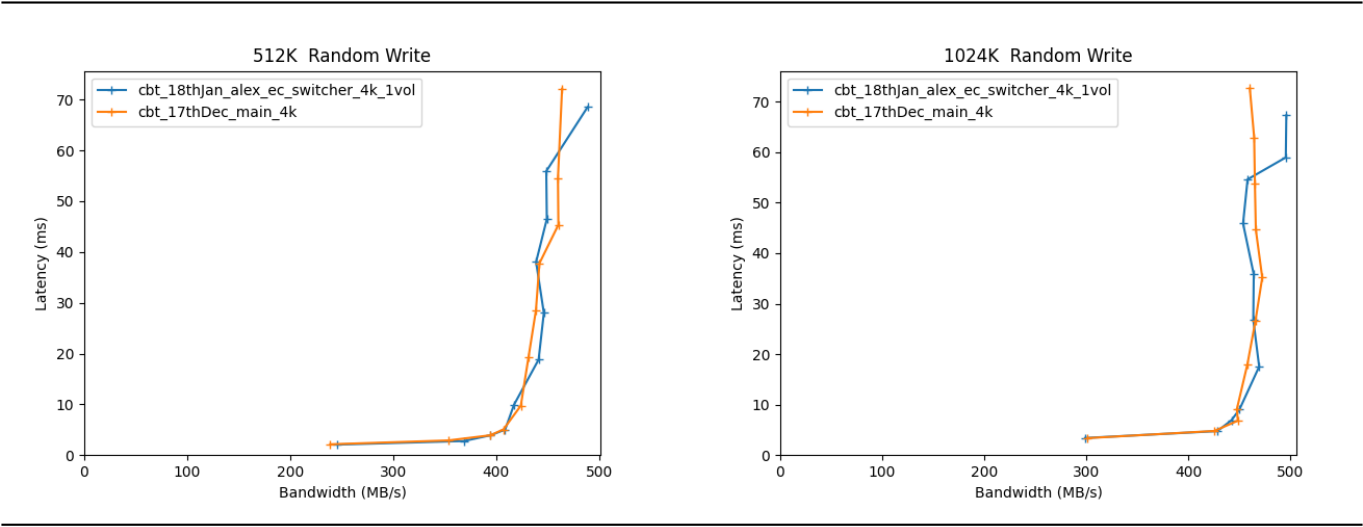


64K 30/70 Random Read/Write
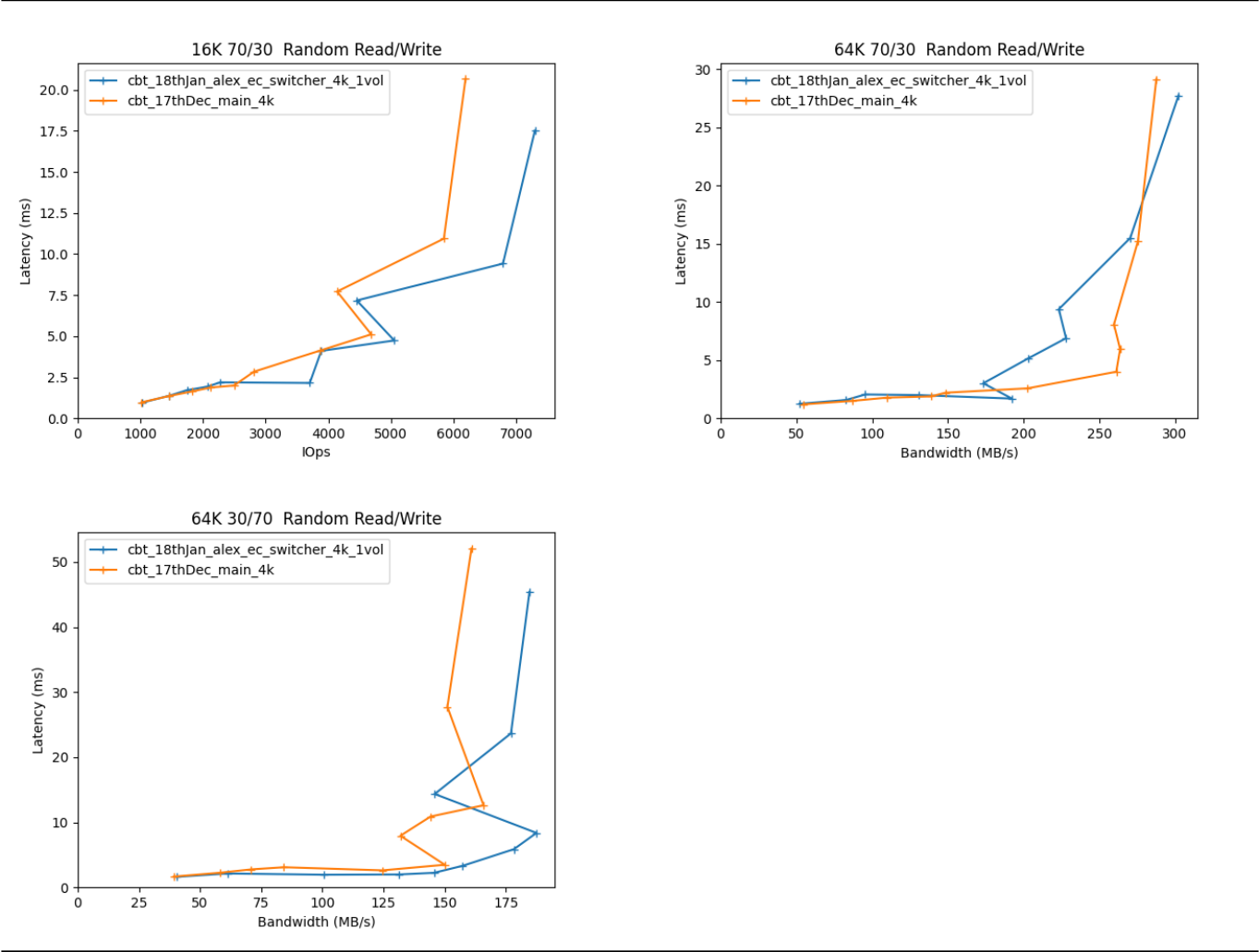
# Configuration yaml files

## 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
      - 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: seqread
      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
      - 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
      - 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
      - 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
      - 1
      op_size: 4096
    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
      - 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
    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
      - 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
      - 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
      - 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
      - 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
      - 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
  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
      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
          - 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
          - 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
  - 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
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}
```

# 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
          - 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: seqread
     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
        - 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
        - 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
      - 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
      - 1
      op_size: 4096
    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
        - 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
    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
      - 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
     - 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
     - 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
      - 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
      - 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
    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
    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
    - 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
    - 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
        - 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
    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}
```