Comparitive Performance Report for 1st-Oct-3way-balanced-baseline vs 6th-oct-ec-direct-reads-3way

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Comparison summary for 1st-Oct-3way-balanced-baseline vs 6th-oct-ec-direct-reads-3way

Sequential Read	1st_Oct_3way_balanced_baseline	6th_oct_ec_direct_reads_3way	%change throughput	%change latency
4K	138070 IOps@0.7ms	221740 IOps@1.7ms	61%	143%
8K	125045 IOps@0.8ms	210088 IOps@1.8ms	68%	125%
16K	111570 IOps@2.6ms	191516 IOps@1.5ms	72%	-42%
32K	91239 IOps@2.8ms	150833 IOps@1.7ms	65%	-39%
64K	4871 MB/s@5.2ms	7963 MB/s@3.2ms	63%	-38%
128K	7798 MB/s@8.6ms	11028 MB/s@6.1ms	41%	-29%
256K	12045 MB/s@16.7ms	11097 MB/s@18.1ms	-8%	8%
384K	10751 MB/s@7.0ms	10900 MB/s@6.9ms	1%	-1%
512K	12733 MB/s@15.8ms	12014 MB/s@8.4ms	-6%	-47%
768K	12692 MB/s@23.8ms	12535 MB/s@8.0ms	-1%	-66%
1024K	12089 MB/s@8.3ms	12597 MB/s@5.3ms	4%	-36%
2048K	11191 MB/s@9.0ms	12244 MB/s@5.5ms	9%	-39%
4096K	10354 MB/s@19.4ms	11455 MB/s@11.7ms	11%	-40%

Sequential Write	1st_Oct_3way_balanced_baseline	6th_oct_ec_direct_reads_3way	%change throughput	%change latency
4K	492507 IOps@3.1ms	501326 IOps@3.1ms	2%	0%
8K	328957 IOps@4.7ms	330849 IOps@4.6ms	1%	-2%
16K	181650 IOps@5.6ms	182236 IOps@5.6ms	0%	0%
32K	101798 IOps@7.5ms	101850 IOps@7.5ms	0%	0%
64K	3483 MB/s@9.6ms	3513 MB/s@9.5ms	1%	-1%
128K	3718 MB/s@13.5ms	3701 MB/s@13.5ms	-0%	0%
256K	3924 MB/s@17.0ms	3938 MB/s@16.9ms	0%	-1%
384K	3951 MB/s@25.3ms	3956 MB/s@25.2ms	0%	-0%
512K	4009 MB/s@4.0ms	4096 MB/s@8.0ms	2%	100%
768K	3992 MB/s@18.5ms	4142 MB/s@5.7ms	4%	-69%
1024K	4015 MB/s@41.2ms	4169 MB/s@15.6ms	4%	-62%
2048K	4146 MB/s@31.1ms	4165 MB/s@30.9ms	0%	-1%
4096K	3816 MB/s@32.8ms	3834 MB/s@32.6ms	0%	-1%

Random Read	1st_Oct_3way_balanced_baseline	6th_oct_ec_direct_reads_3way	%change throughput	%change latency
4K	185438 IOps@4.1ms	203928 IOps@3.8ms	10%	-7%
8K	178815 IOps@4.3ms	195725 IOps@3.9ms	9%	-9%
16K	164000 IOps@3.6ms	180744 IOps@3.2ms	10%	-11%
32K	134280 IOps@2.9ms	151599 IOps@3.4ms	13%	17%
64K	6881 MB/s@3.7ms	7798 MB/s@3.2ms	13%	-14%
128K	10147 MB/s@3.3ms	11352 MB/s@2.9ms	12%	-12%
256K	12833 MB/s@5.2ms	11488 MB/s@4.4ms	-10%	-15%
384K	13059 MB/s@7.7ms	11292 MB/s@8.9ms	-14%	16%
512K	12833 MB/s@3.9ms	12009 MB/s@5.6ms	-6%	44%
768K	12381 MB/s@4.1ms	12105 MB/s@3.1ms	-2%	-24%

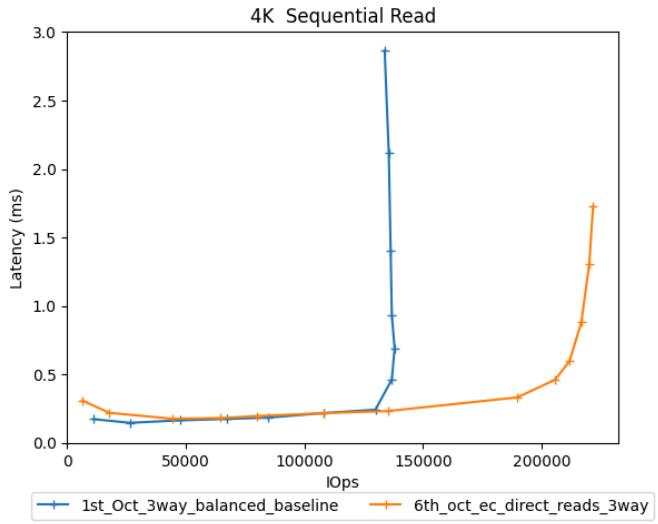
Random Read	1st_Oct_3way_balanced_baseline	6th_oct_ec_direct_reads_3way	%change throughput	%change latency
1024K	12053 MB/s@5.6ms	12567 MB/s@4.0ms	4%	-29%
2048K	11212 MB/s@9.0ms	12236 MB/s@5.5ms	9%	-39%
4096K	10224 MB/s@19.7ms	11442 MB/s@11.7ms	12%	-41%

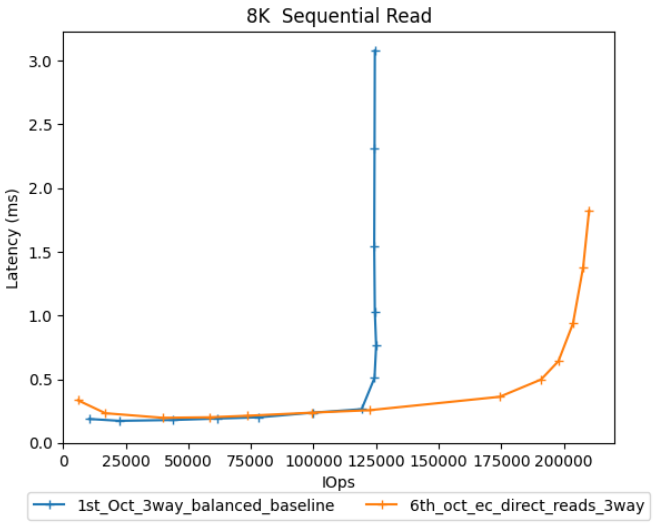
Random Write	1st_Oct_3way_balanced_baseline	6th_oct_ec_direct_reads_3way	%change throughput	%change latency
4K	49783 IOps@5.1ms	48980 IOps@7.8ms	-2%	53%
8K	47446 IOps@5.4ms	46931 IOps@16.4ms	-1%	204%
16K	46475 IOps@8.2ms	44675 IOps@8.6ms	-4%	5%
32K	43324 IOps@8.8ms	42428 IOps@9.0ms	-2%	2%
64K	2370 MB/s@10.6ms	2378 MB/s@10.5ms	0%	-1%
256K	4054 MB/s@16.4ms	4041 MB/s@4.0ms	-0%	-76%
512K	4531 MB/s@7.1ms	4535 MB/s@7.1ms	0%	0%
1024K	4142 MB/s@5.6ms	4197 MB/s@7.5ms	1%	34%

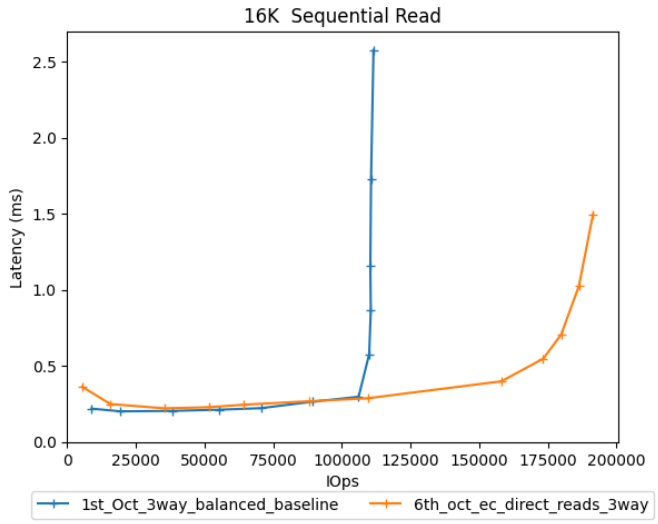
Random Read/Write	1st_Oct_3way_balanced_baseline	6th_oct_ec_direct_reads_3way	%change throughput	%change latency
4K_70/30	98855 IOps@2.6ms	89854 IOps@2.8ms	-9%	8%
16K_70/30	89858 IOps@2.8ms	85302 IOps@3.0ms	-5%	7%
64K_30/70	2960 MB/s@5.6ms	2830 MB/s@5.9ms	-4%	5%
64K_70/30	4284 MB/s@3.9ms	4085 MB/s@4.1ms	-5%	5%

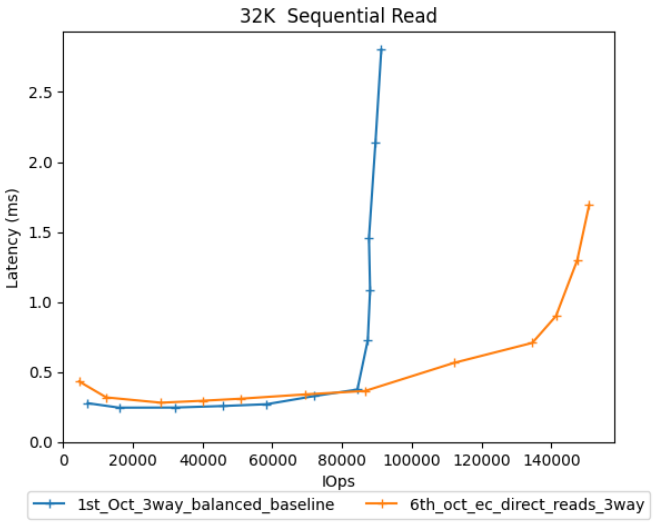
Response Curves

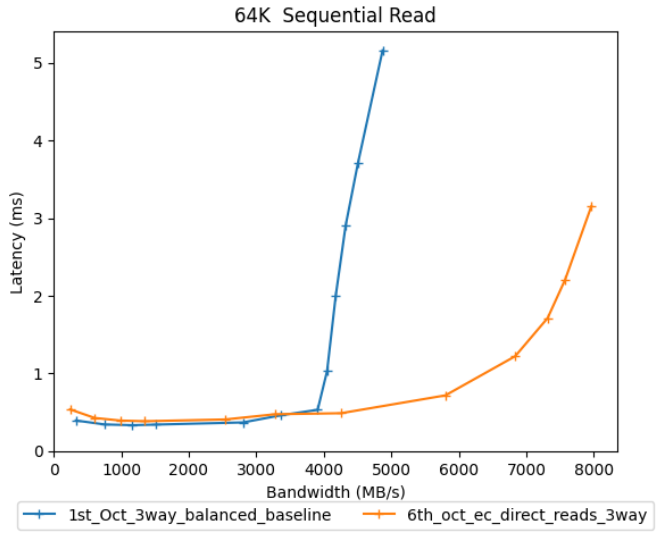
Sequential Read

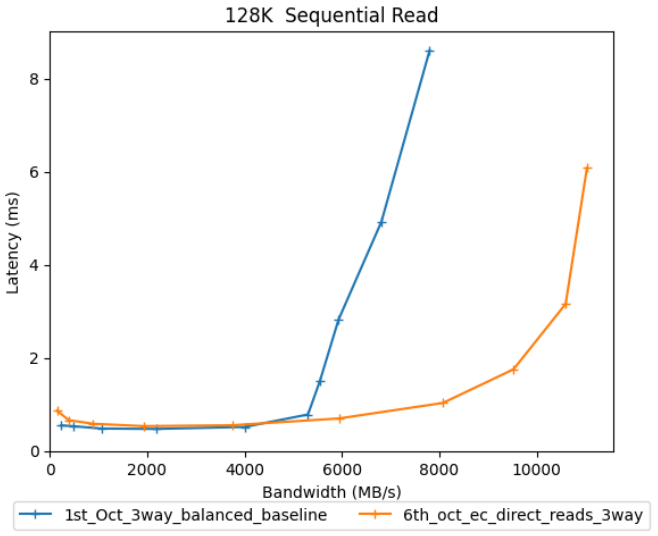


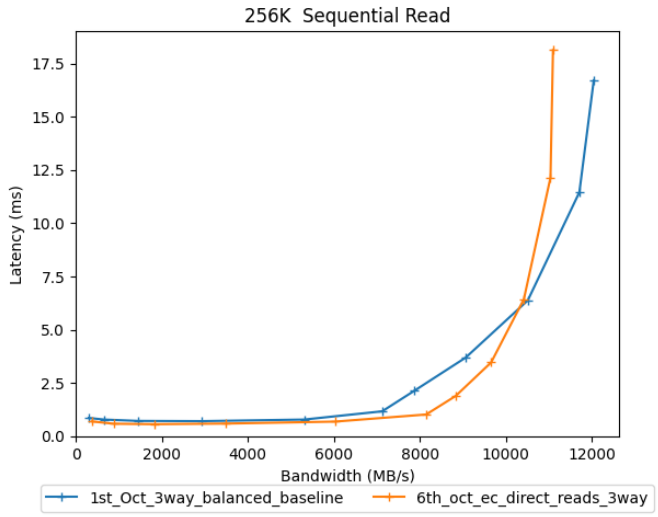


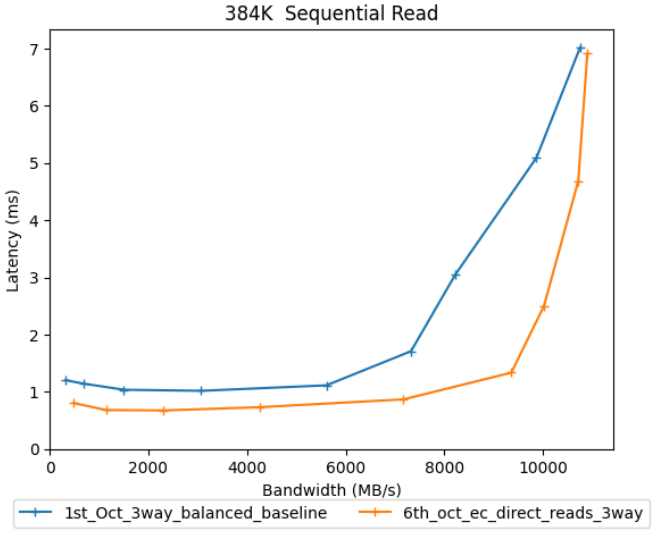


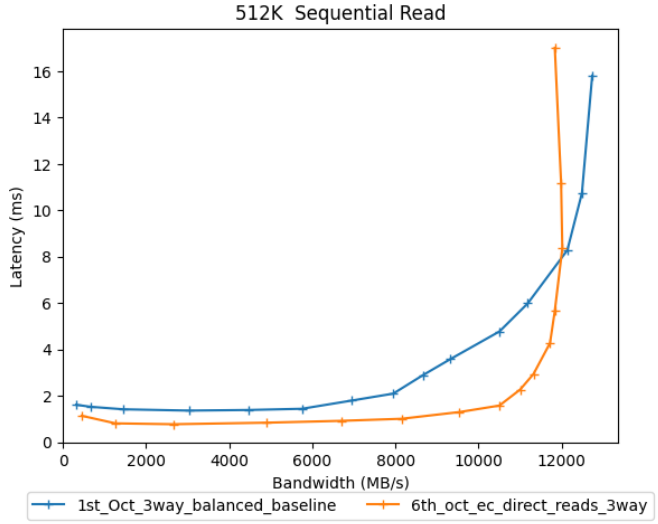


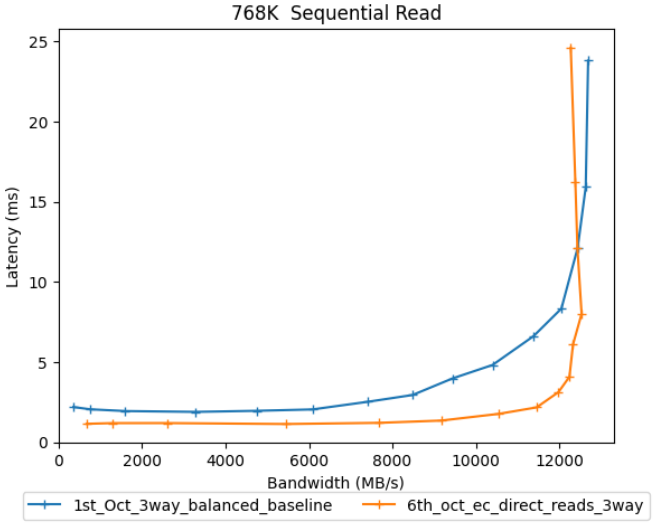

64K Sequential Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

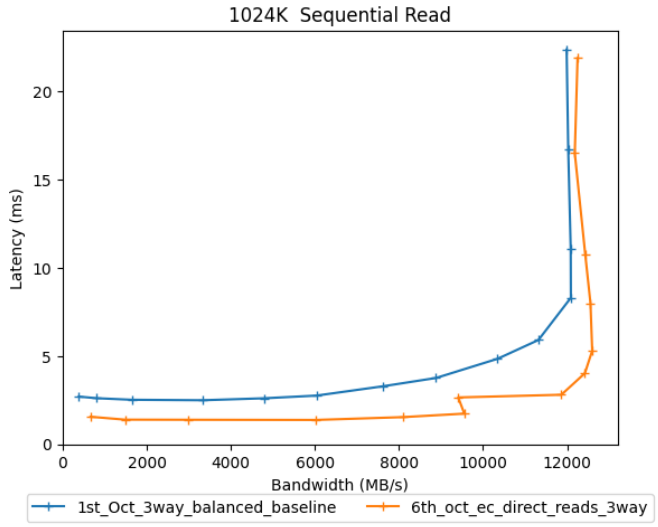

128K Sequential Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

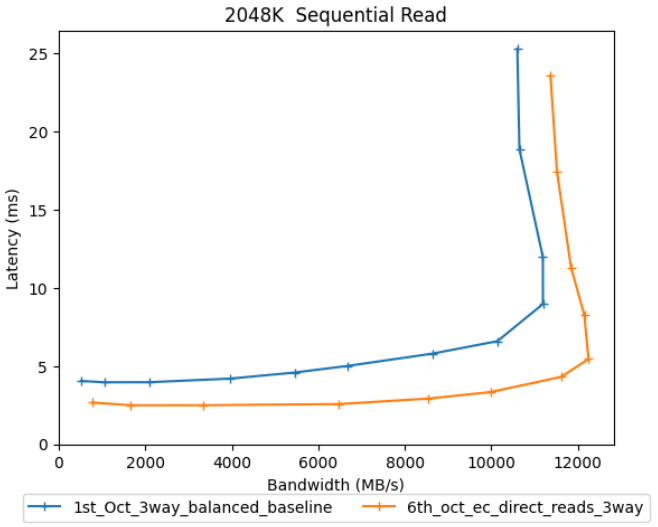

256K Sequential Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

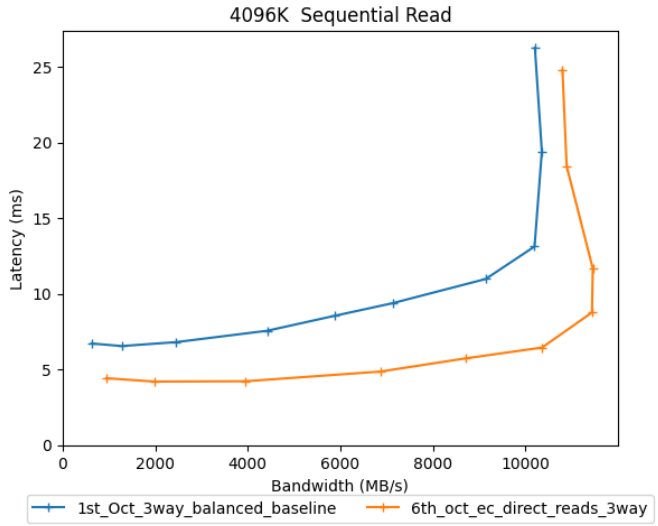

384K Sequential Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way


512K Sequential Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

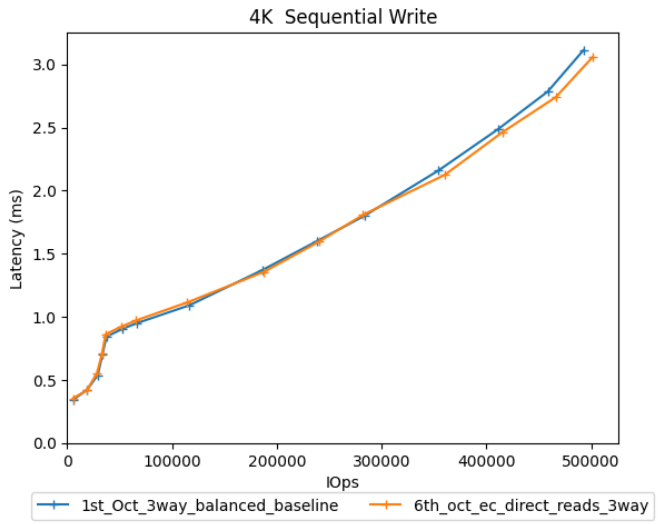

768K Sequential Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

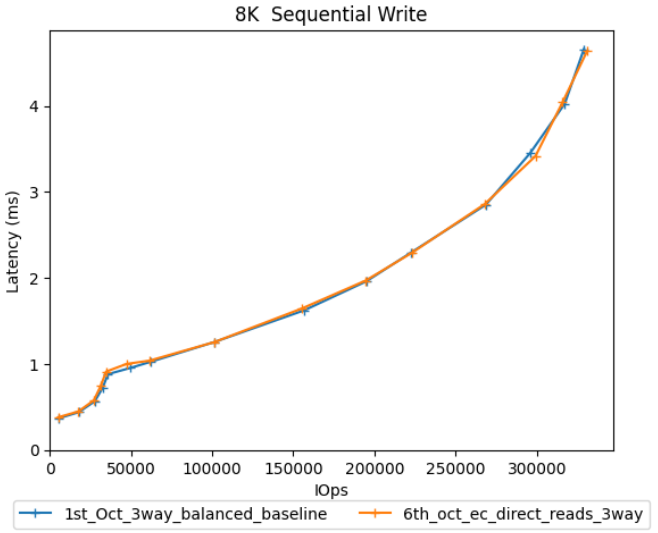


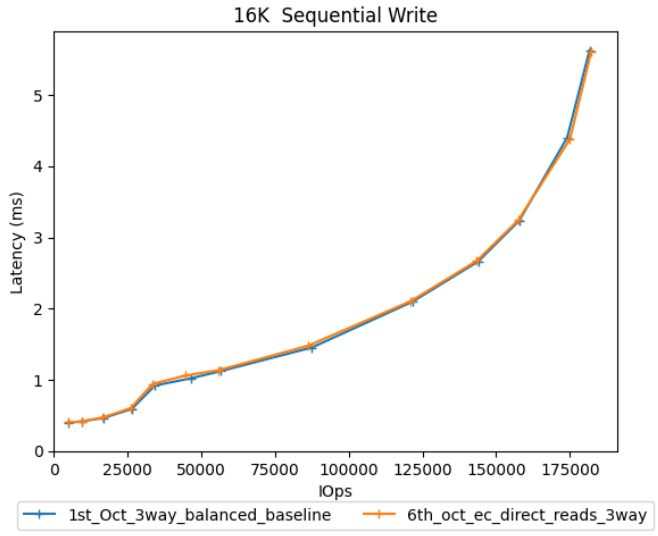


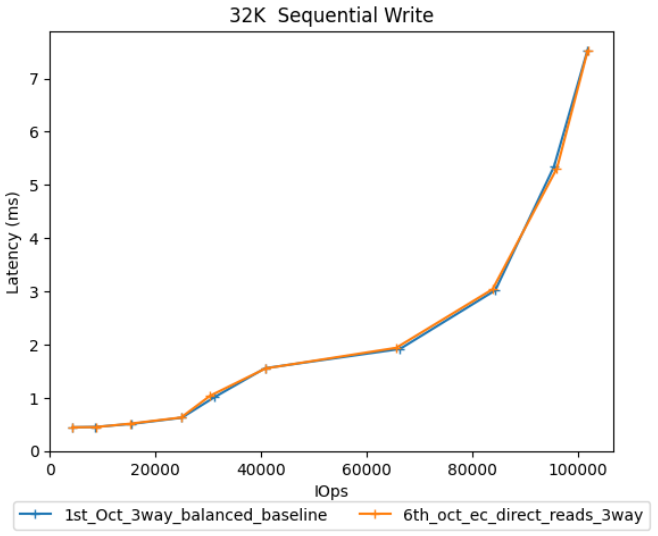


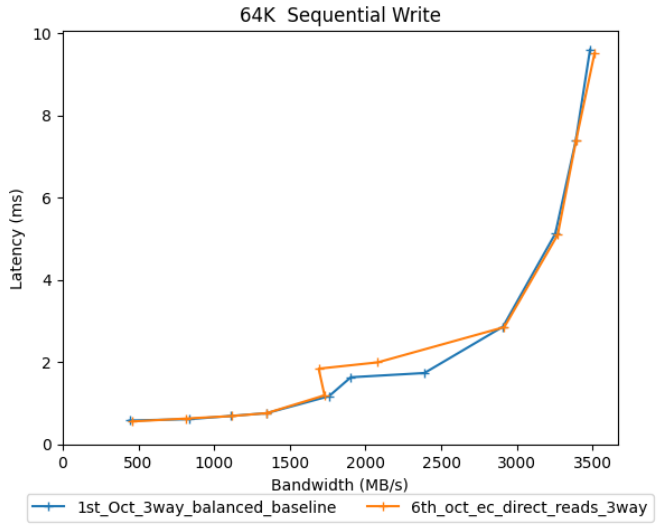
Sequential Write

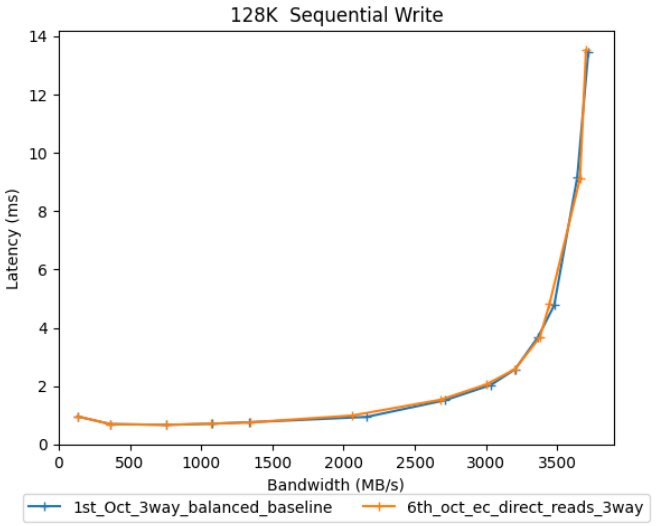


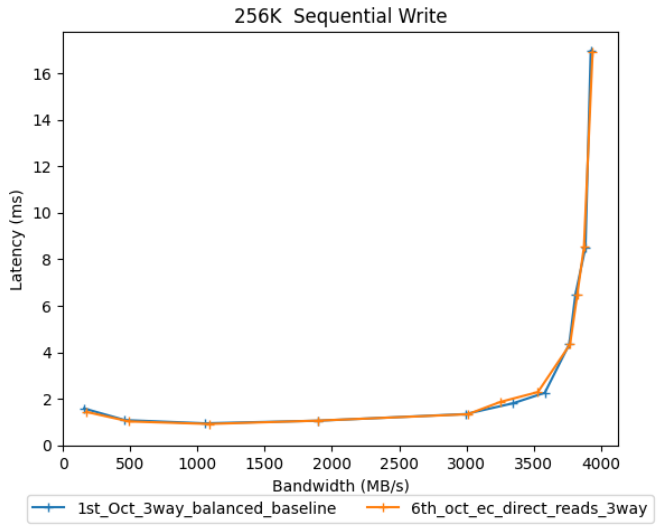


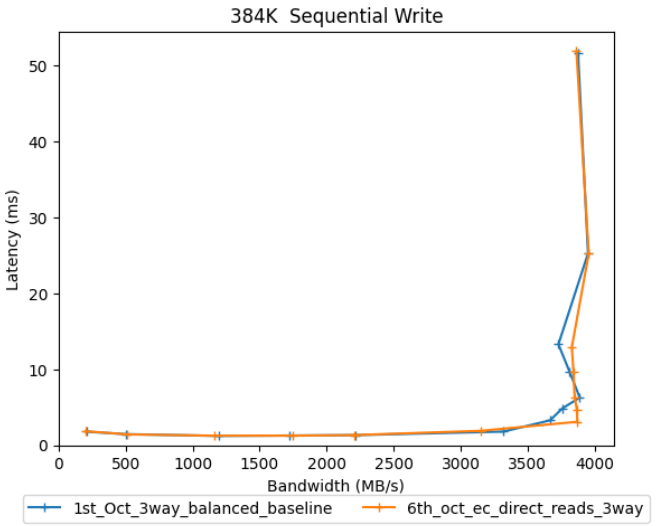

16K Sequential Write
Latency (ms)
IOps
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

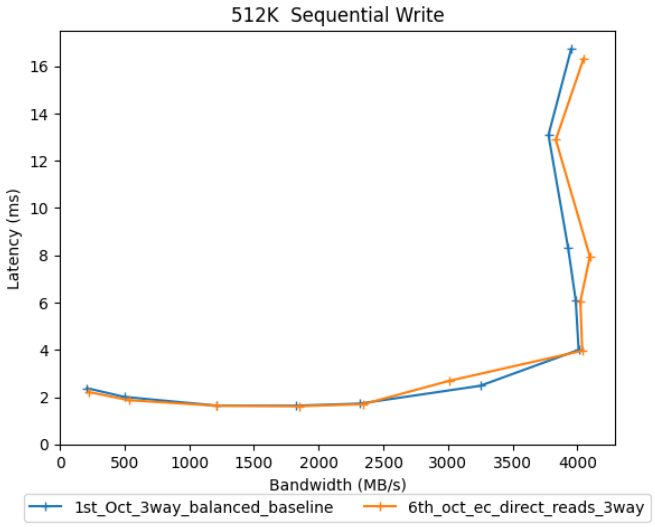

32K Sequential Write
Latency (ms)
IOps
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

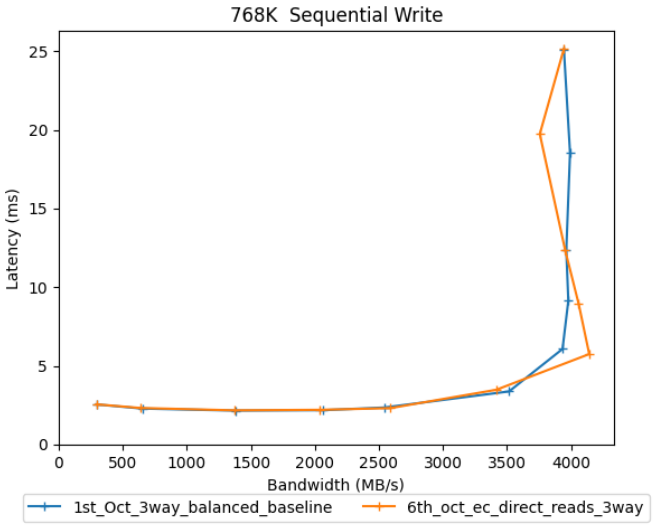

64K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

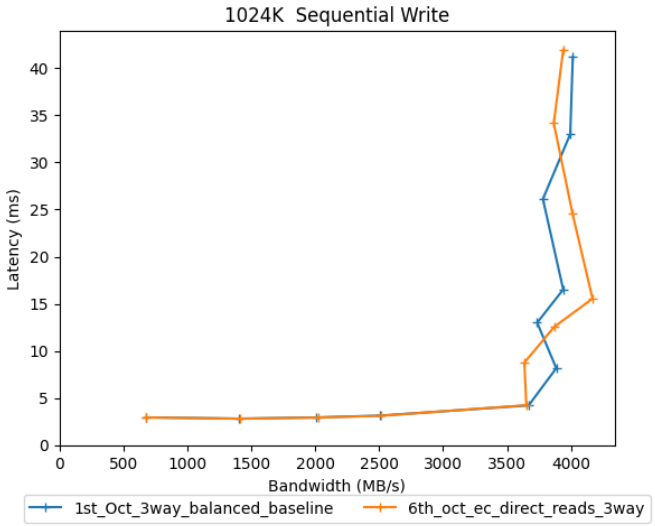

128K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

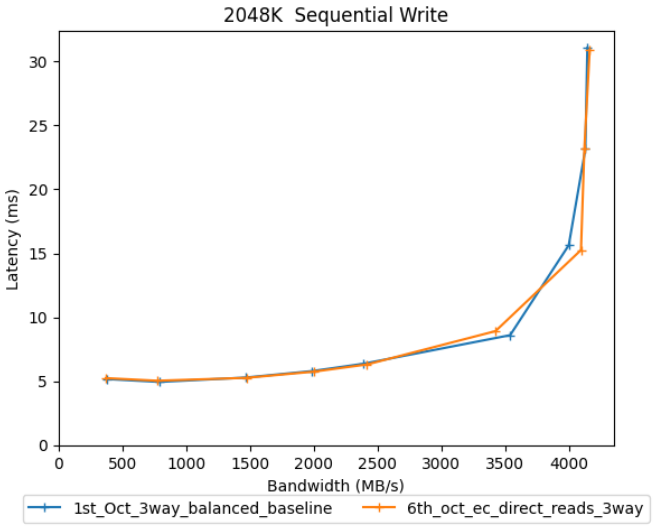

256K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

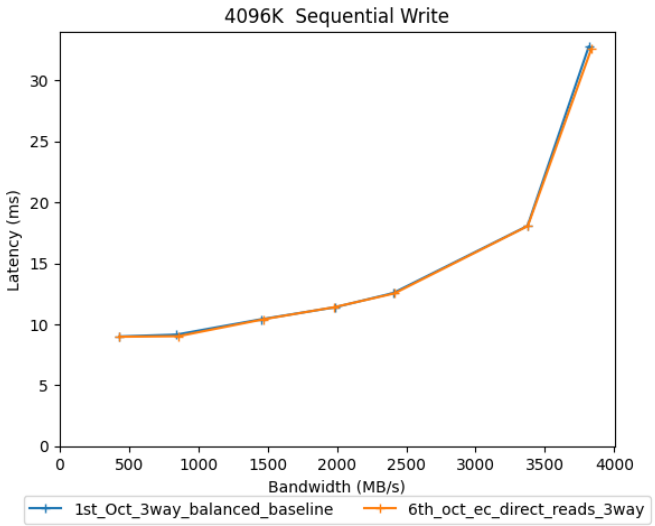

384K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way


512K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

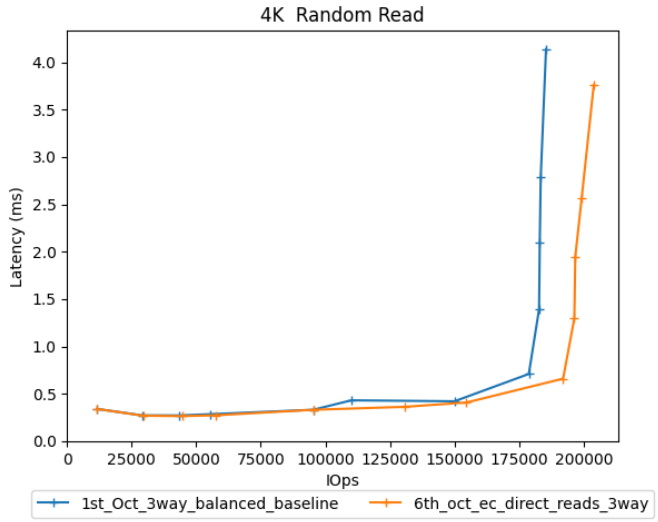

768K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

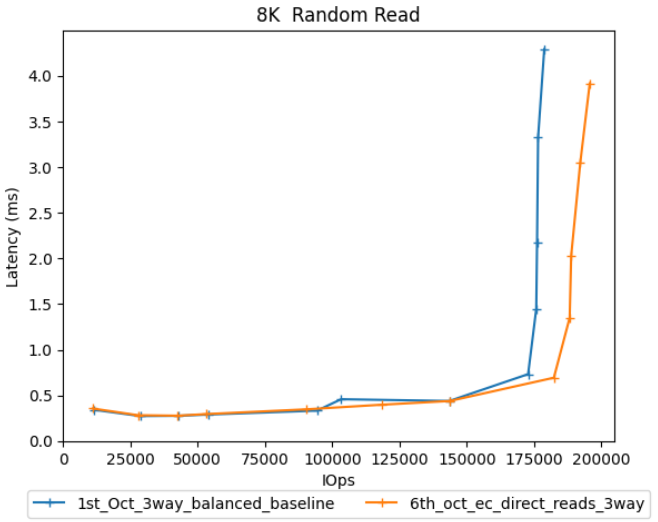

1024K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

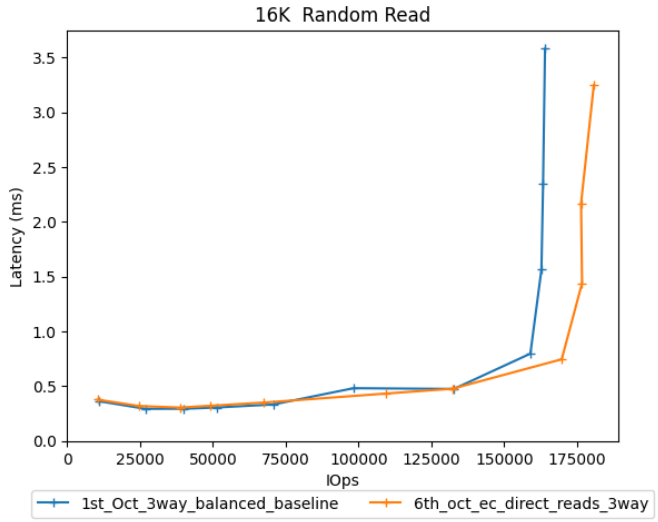

2048K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

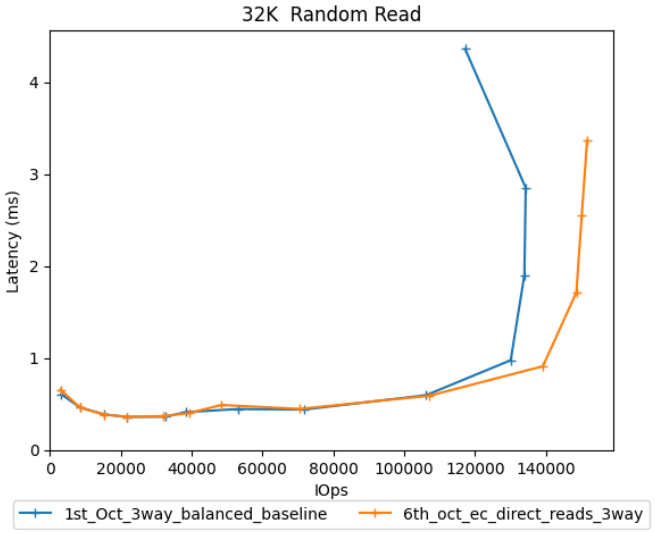

4096K Sequential Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

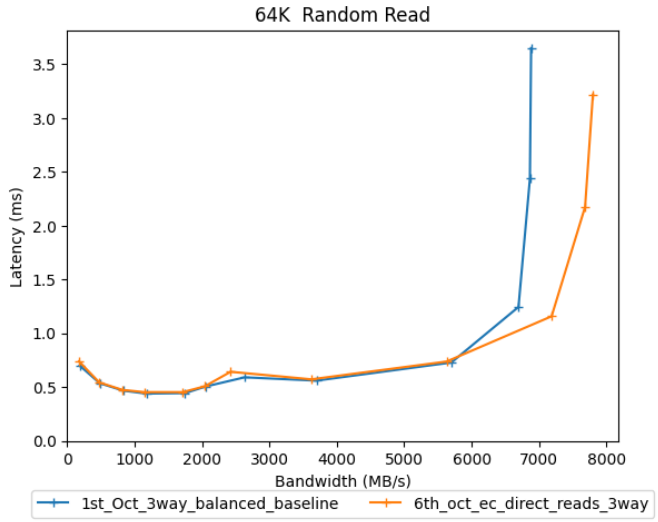
Random Read

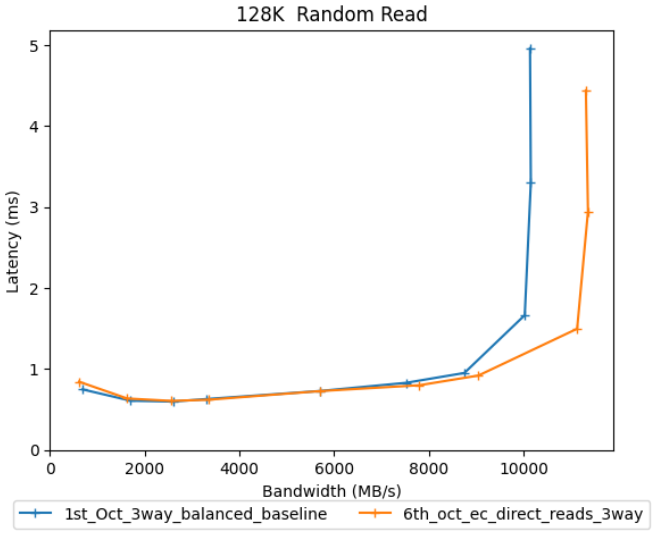

4K Random Read
Latency (ms)
IOps
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

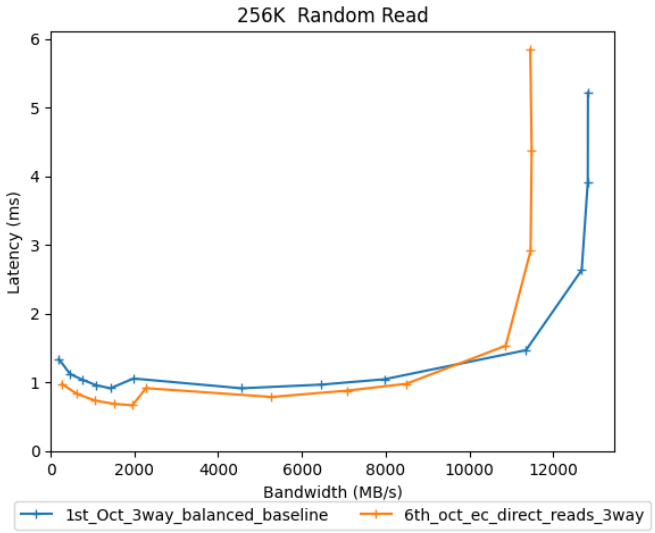

8K Random Read
Latency (ms)
IOps
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

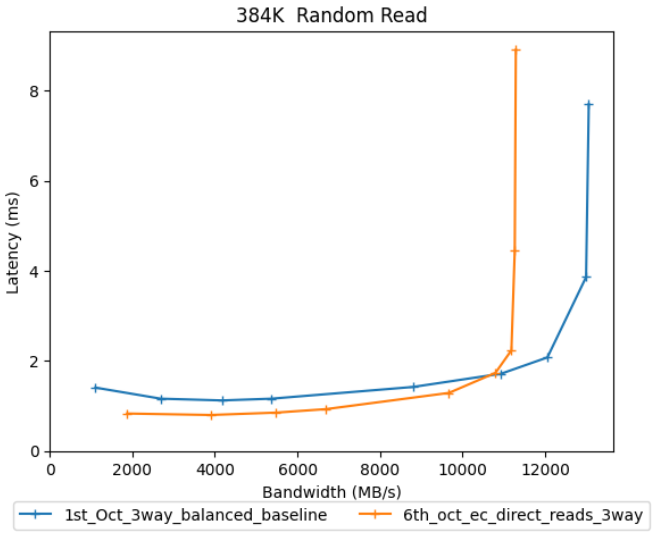

16K Random Read
Latency (ms)
IOps
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

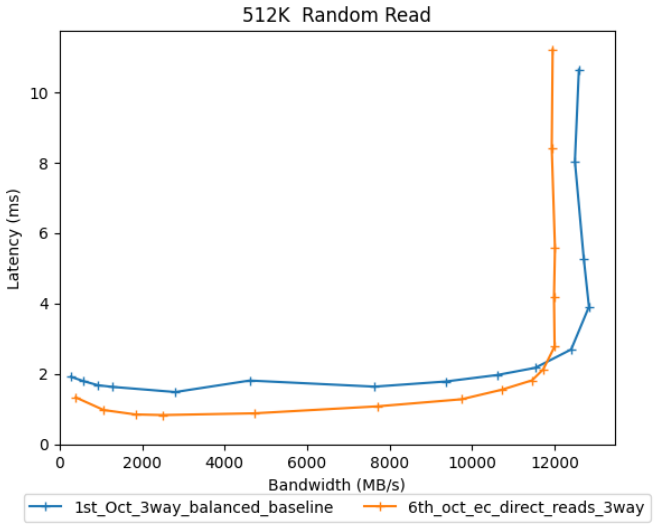

32K Random Read
Latency (ms)
IOps
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

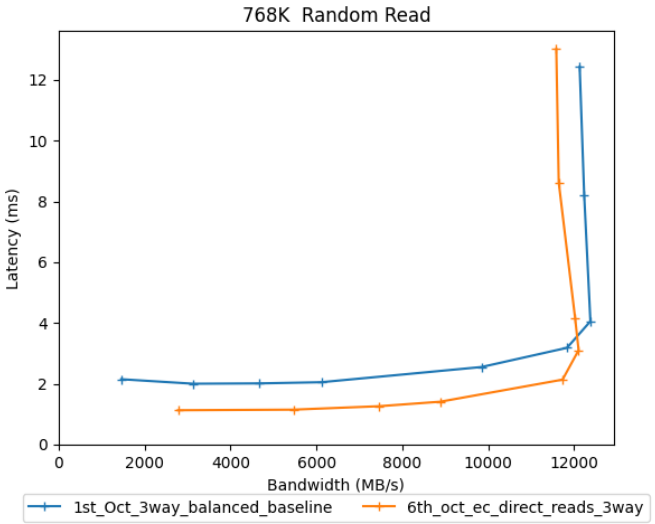

64K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

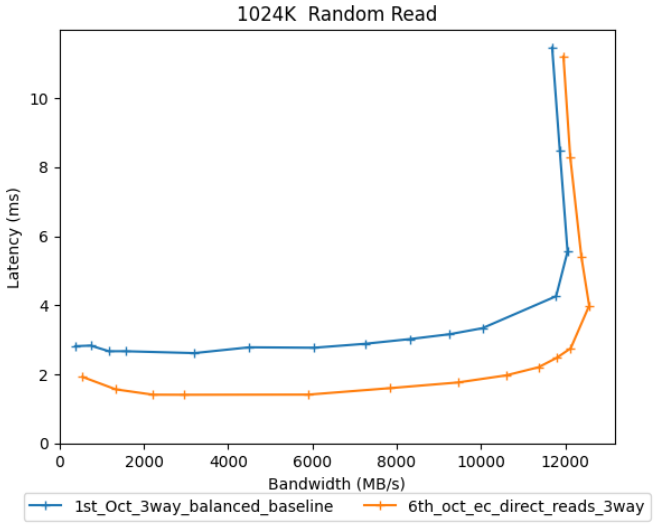

128K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

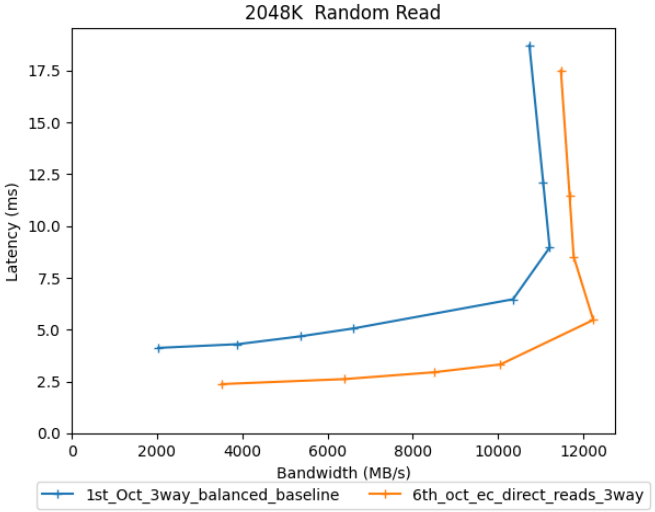

256K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

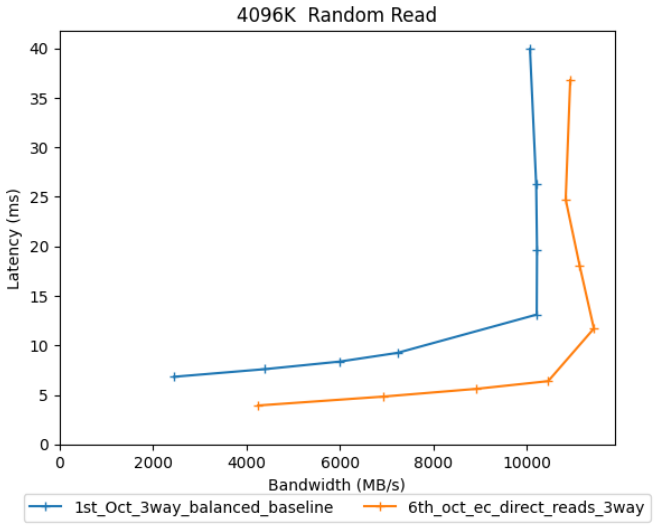

384K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way


512K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

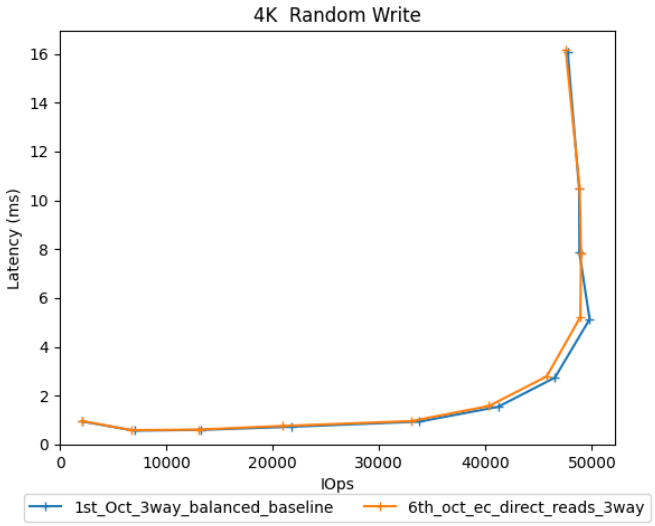

768K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

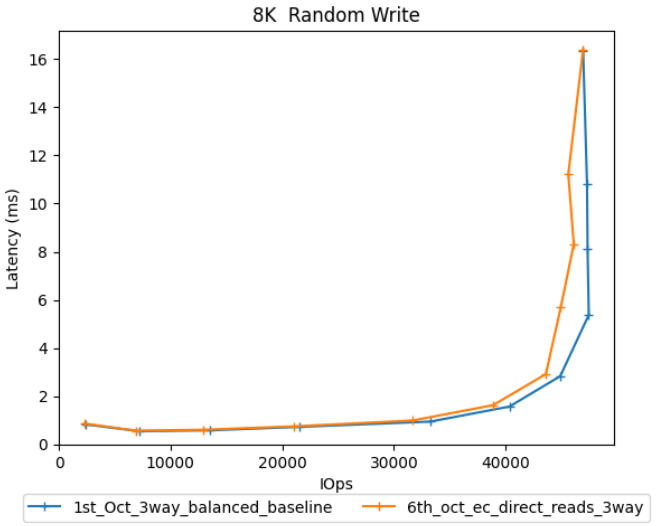

1024K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

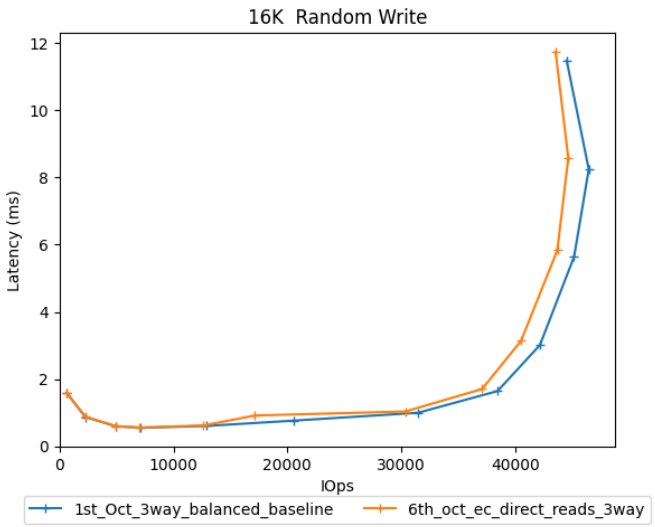

2048K Random Read
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

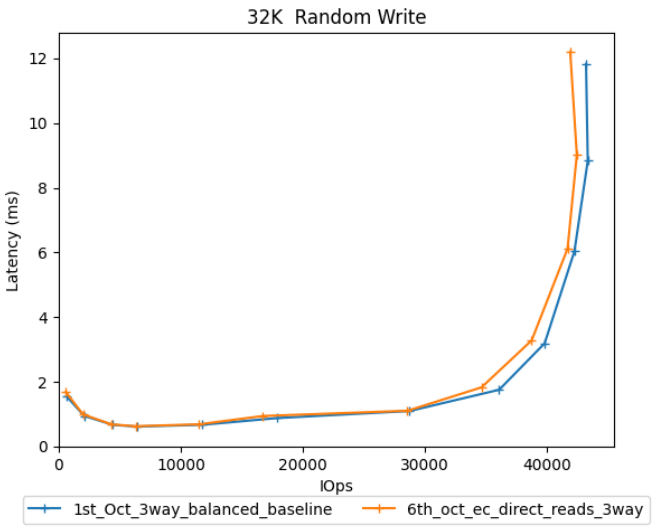


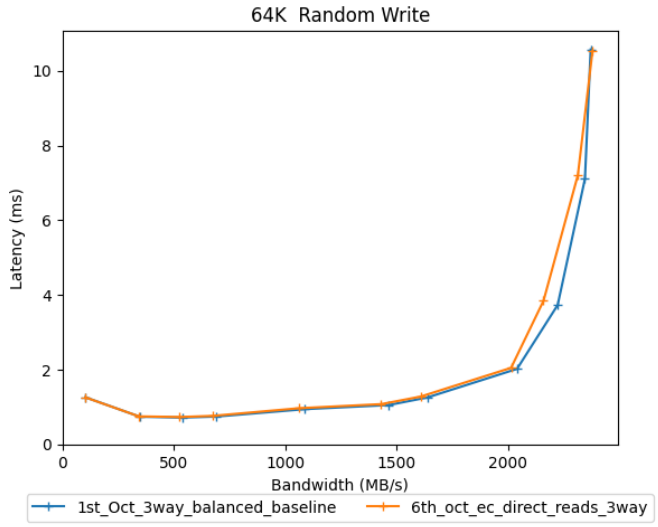
Random Write

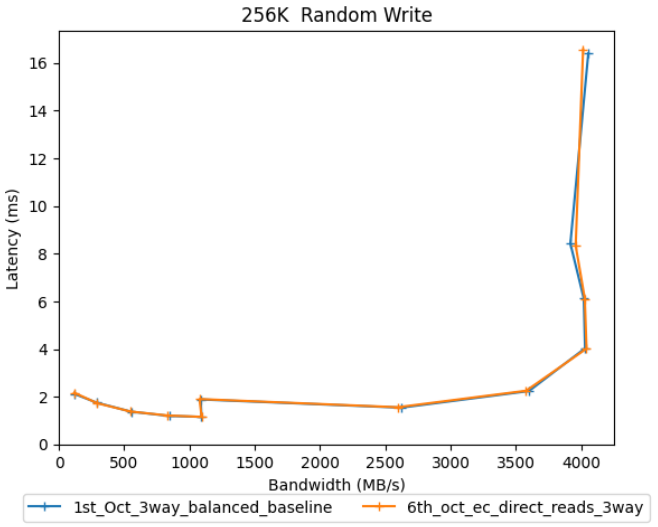


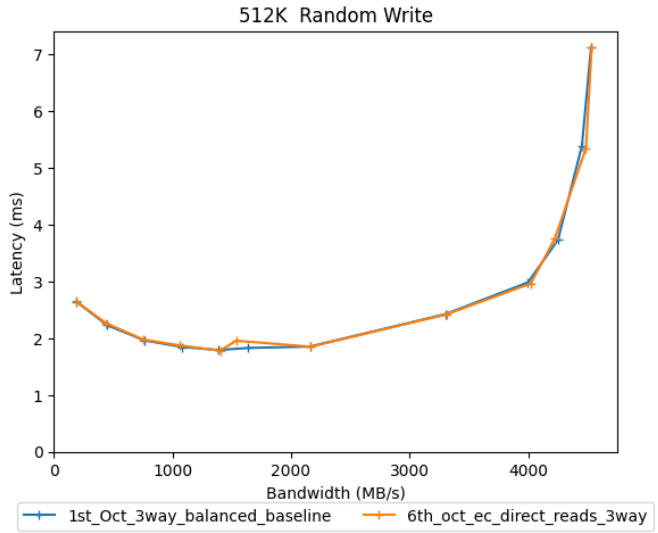


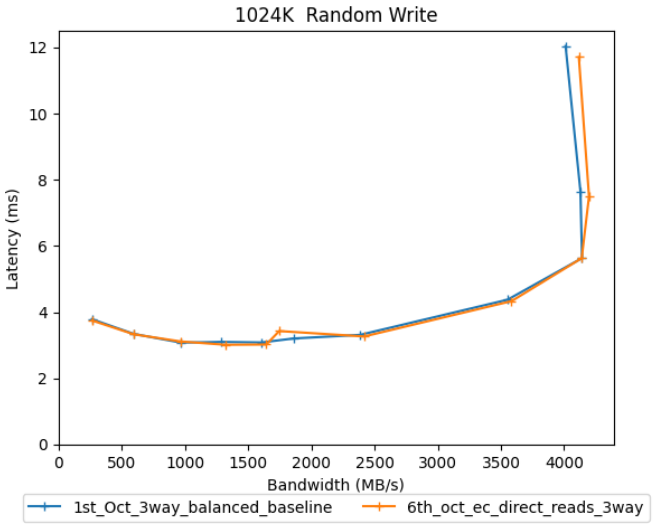




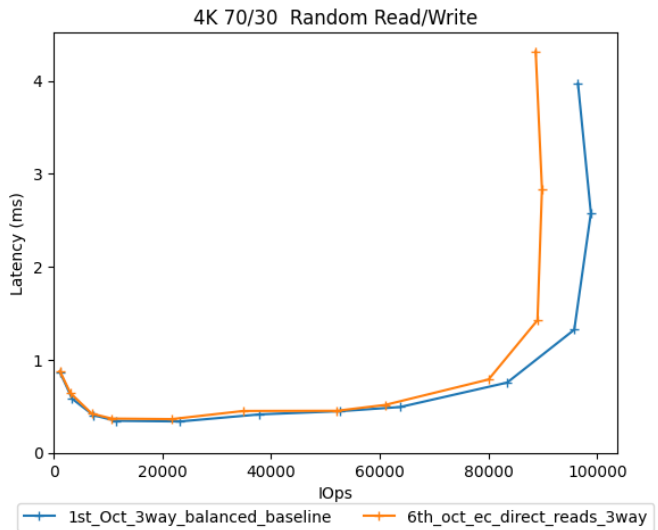


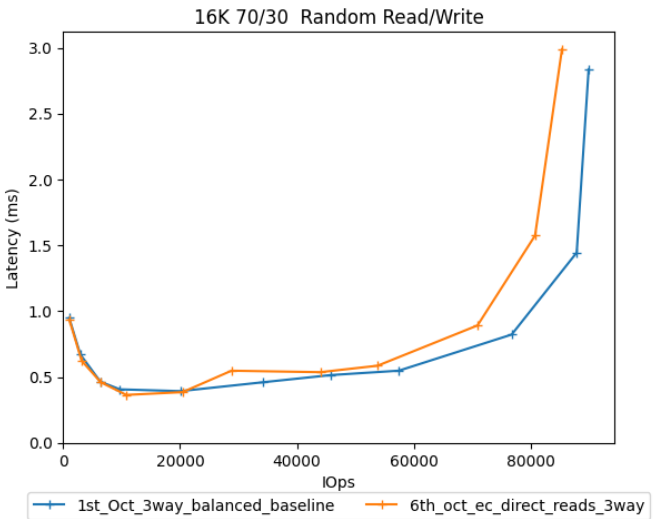


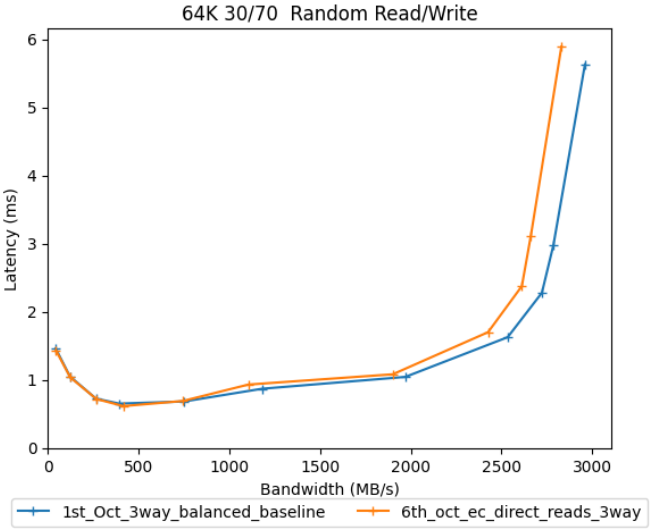


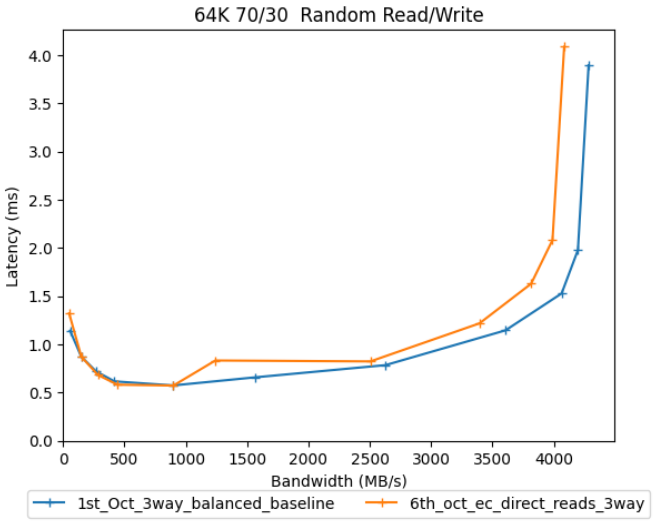


Random Read/Write






64K 30/70 Random Read/Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way


64K 70/30 Random Read/Write
Latency (ms)
Bandwidth (MB/s)
1st_Oct_3way_balanced_baseline
6th_oct_ec_direct_reads_3way

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
  prefill:
    blocksize: 64k
    numjobs: 1
  procs_per_volume:
  - 1
  ramp: 30
  rbdname: cbt-librbdfio
  time: 90
  time_based: true
  use_existing_volumes: true
  vol_size: 608333
  volumes_per_client:
  - 16
  workloads:
    128krandomread:
      jobname: randread
      mode: randread
      numjobs:
      - 1
      op_size: 131072
      total_iodepth:
      - 4
      - 8
      - 12
      - 16
      - 32
      - 48
      - 64
      - 128
      - 256
      - 384
    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
  - 48
  - 64
  - 96
  - 128
1Mrandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
```

```
  - 1
  op_size: 1048576
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 8
  - 16
  - 24
  - 32
  - 48
1Mseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 1048576
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
  - 96
  - 128
  - 192
  - 256
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
    - 192
    - 256
  256krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 262144
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 8
    - 16
    - 32
    - 64
    - 96
    - 128
    - 256
  2Mrandomread:
    jobname: randread
    mode: randread
    numjobs:
    - 1
    op_size: 2097152
    total_iodepth:
    - 4
    - 8
    - 12
    - 16
    - 32
    - 48
    - 64
    - 96
  2Mseqread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 2097152
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48
    - 64
    - 96
    - 128
```

```
2Mseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 2097152
  total_iodepth:
  - 1
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
  - 48
  - 64
32krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 32768
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  - 384
  - 512
32krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 32768
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 256
  - 384
  - 512
384krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 393216
  total_iodepth:
  - 4
```

```
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
4Mrandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 4194304
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 96
4Mseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 4194304
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
4Mseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 4194304
  total_iodepth:
  - 1
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
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
  - 512
  - 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
  - 96
  - 128
  - 192
  - 256
512krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 8
  - 16
  - 24
  - 32
  - 48
  - 64
512kseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
  - 96
  - 128
  - 192
  - 256
  - 384
512kseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
  - 48
```

```
  - 64
  - 96
  - 128
64k3070:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 30
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 32
  - 64
  - 96
  - 128
  - 256
64k7030:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 70
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 32
  - 64
  - 96
  - 128
  - 256
64krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  - 384
64krandomwrite:
  jobname: randwrite
  mode: randwrite
```

```
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  - 384
64kseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  - 192
  - 256
  - 384
64kseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  - 512
768krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 786432
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
```

```
  - 32
  - 48
  - 64
  - 128
  - 192
8krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 8192
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  - 588
  - 768
8krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 8192
  total_iodepth:
  - 2
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 256
  - 384
  - 512
  - 768
precondition:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
  - 1
  op_size: 65536
  time: 600
  total_iodepth:
  - 16
seq128kread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 131072
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
```

```
    - 16
    - 32
    - 64
    - 128
    - 256
    - 512
  seq128kwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 131072
    total_iodepth:
    - 1
    - 2
    - 4
    - 6
    - 8
    - 16
    - 32
    - 48
    - 64
    - 96
    - 128
    - 256
    - 384
  seq16kread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 16384
    total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
    - 288
  seq16kwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 16384
    total_iodepth:
    - 2
    - 4
    - 8
    - 16
    - 32
    - 48
    - 64
    - 128
    - 256
    - 384
    - 512
```

```
  - 768
  - 1024
seq256kread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 262144
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 256
  - 512
  - 768
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
  - 256
seq32kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 32768
```

```
  total_iodepth:
  - 2
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 256
  - 512
  - 768
seq384kread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 393216
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 192
seq384kwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 393216
  total_iodepth:
  - 1
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
  - 48
  - 64
  - 96
  - 128
  - 256
  - 512
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
  seq768kread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 786432
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48
    - 64
    - 96
    - 128
    - 192
    - 256
    - 384
  seq768kwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 786432
    total_iodepth:
    - 1
    - 2
    - 4
    - 6
    - 8
    - 16
    - 32
    - 48
```

```
        - 64
        - 96
        - 128
      seq8kread:
        jobname: seqread
        mode: read
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 4
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 96
        - 128
        - 192
        - 288
        - 384
      seq8kwrite:
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 8
        - 16
        - 24
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
        - 1024
        - 1280
        - 1536
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  fs: xfs
  head: --- server1 ---
  iterations: 1
  mgrs:
    --- server1 ---:
      a: null
  mkfs_opts: -f -i size=2048
```

```
  mons:
    --- server1 ---:
      a: --- IP Address --:6789
  mount_opts: -o inode64,noatime,logbsize=256k
  osds:
  - --- server1 ---
  osds_per_node: 8
  pdsh_ssh_args: -a -x -l%u %h
  rados_cmd: /usr/bin/rados
  rbd_cmd: /usr/bin/rbd
  tmp_dir: /tmp/cbt
  use_existing: true
  user: ljsanders
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
  librbdfio:
    cmd_path: /usr/local/bin/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
    prefill:
      blocksize: 64k
      numjobs: 1
    procs_per_volume:
    - 1
    ramp: 30
    rbdname: cbt-librbdfio
    time: 90
    time_based: true
    use_existing_volumes: true
    vol_size: 608333
    volumes_per_client:
    - 16
    workloads:
      128krandomread:
        jobname: randread
        mode: randread
        numjobs:
        - 1
        op_size: 131072
        total_iodepth:
        - 4
        - 8
        - 12
        - 16
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
      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
    - 48
    - 64
    - 96
    - 128
  1Mrandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 1048576
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 8
    - 16
    - 24
    - 32
    - 48
  1Mseqread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 1048576
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48
    - 64
    - 96
    - 128
    - 192
    - 256
  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
  - 192
  - 256
256krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 262144
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 5
  - 8
  - 16
  - 32
  - 64
  - 96
  - 128
  - 256
2Mrandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 2097152
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 96
2Mseqread:
  jobname: seqread
  mode: read
  numjobs:
```

```
  - 1
  op_size: 2097152
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
  - 96
  - 128
2Mseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 2097152
  total_iodepth:
  - 1
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
  - 48
  - 64
32krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 32768
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  - 384
  - 512
32krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 32768
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
```

```
  - 16
  - 32
  - 64
  - 128
  - 256
  - 384
  - 512
384krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 393216
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
4Mrandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 4194304
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 96
4Mseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 4194304
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 12
  - 16
  - 24
  - 32
  - 48
  - 64
4Mseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 4194304
  total_iodepth:
  - 1
```

```
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
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
  - 512
  - 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
    - 96
    - 128
    - 192
    - 256
  512krandomwrite:
    jobname: randwrite
    mode: randwrite
    numjobs:
    - 1
    op_size: 524288
    total_iodepth:
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 8
    - 16
    - 24
    - 32
    - 48
    - 64
  512kseqread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 524288
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48
    - 64
    - 96
    - 128
    - 192
    - 256
    - 384
```

```
512kseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 524288
  total_iodepth:
  - 1
  - 2
  - 4
  - 6
  - 8
  - 16
  - 32
  - 48
  - 64
  - 96
  - 128
64k3070:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 30
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 32
  - 64
  - 96
  - 128
  - 256
64k7030:
  jobname: randmix
  mode: randrw
  numjobs:
  - 1
  op_size: 65536
  rwmixread: 70
  total_iodepth:
  - 1
  - 2
  - 3
  - 4
  - 8
  - 16
  - 32
  - 64
  - 96
  - 128
  - 256
64krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
```

```
  - 2
  - 4
  - 6
  - 8
  - 12
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  - 384
64krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  - 256
  - 384
64kseqread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 2
  - 4
  - 6
  - 8
  - 16
  - 24
  - 32
  - 64
  - 128
  - 192
  - 256
  - 384
64kseqwrite:
  jobname: seqwrite
  mode: write
  numjobs:
  - 1
  op_size: 65536
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
```

```
  - 128
  - 256
  - 384
  - 512
768krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 786432
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 192
8krandomread:
  jobname: randread
  mode: randread
  numjobs:
  - 1
  op_size: 8192
  total_iodepth:
  - 4
  - 8
  - 12
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  - 588
  - 768
8krandomwrite:
  jobname: randwrite
  mode: randwrite
  numjobs:
  - 1
  op_size: 8192
  total_iodepth:
  - 2
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 256
  - 384
  - 512
  - 768
precondition:
  jobname: precond1rw
  mode: randwrite
  monitor: false
  numjobs:
  - 1
```

```
    op_size: 65536
    time: 600
    total_iodepth:
    - 16
  seq128kread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 131072
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 16
    - 32
    - 64
    - 128
    - 256
    - 512
  seq128kwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 131072
    total_iodepth:
    - 1
    - 2
    - 4
    - 6
    - 8
    - 16
    - 32
    - 48
    - 64
    - 96
    - 128
    - 256
    - 384
  seq16kread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 16384
    total_iodepth:
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 64
    - 96
    - 128
    - 192
    - 288
  seq16kwrite:
    jobname: seqwrite
    mode: write
```

```
  numjobs:
  - 1
  op_size: 16384
  total_iodepth:
  - 2
  - 4
  - 8
  - 16
  - 32
  - 48
  - 64
  - 128
  - 256
  - 384
  - 512
  - 768
  - 1024
seq256kread:
  jobname: seqread
  mode: read
  numjobs:
  - 1
  op_size: 262144
  total_iodepth:
  - 1
  - 2
  - 4
  - 8
  - 16
  - 32
  - 64
  - 128
  - 256
  - 512
  - 768
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
    - 256
  seq32kwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 32768
    total_iodepth:
    - 2
    - 4
    - 8
    - 16
    - 32
    - 64
    - 128
    - 256
    - 512
    - 768
  seq384kread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 393216
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 16
    - 32
    - 64
    - 128
    - 192
  seq384kwrite:
    jobname: seqwrite
    mode: write
    numjobs:
    - 1
    op_size: 393216
    total_iodepth:
    - 1
    - 2
    - 4
    - 6
    - 8
    - 16
    - 32
    - 48
    - 64
    - 96
    - 128
    - 256
    - 512
  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
  seq768kread:
    jobname: seqread
    mode: read
    numjobs:
    - 1
    op_size: 786432
    total_iodepth:
    - 1
    - 2
    - 4
    - 8
    - 12
    - 16
    - 24
    - 32
    - 48
    - 64
    - 96
    - 128
    - 192
    - 256
    - 384
```

```
      seq768kwrite:
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 786432
        total_iodepth:
        - 1
        - 2
        - 4
        - 6
        - 8
        - 16
        - 32
        - 48
        - 64
        - 96
        - 128
      seq8kread:
        jobname: seqread
        mode: read
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 4
        - 8
        - 12
        - 16
        - 24
        - 32
        - 64
        - 96
        - 128
        - 192
        - 288
        - 384
      seq8kwrite:
        jobname: seqwrite
        mode: write
        numjobs:
        - 1
        op_size: 8192
        total_iodepth:
        - 2
        - 8
        - 16
        - 24
        - 32
        - 48
        - 64
        - 128
        - 256
        - 384
        - 512
        - 768
        - 1024
        - 1280
        - 1536
cluster:
  archive_dir: /tmp/cbt
  ceph-mgr_cmd: /usr/bin/ceph-mgr
```

```
  ceph-mon_cmd: /usr/bin/ceph-mon
  ceph-osd_cmd: /usr/bin/ceph-osd
  ceph-run_cmd: /usr/bin/ceph-run
  ceph_cmd: /usr/bin/ceph
  clients:
  - --- server1 ---
  clusterid: ceph
  conf_file: /cbt/ceph.conf.4x1x1.fs
  fs: xfs
  head: --- server1 ---
  iterations: 1
  mgrs:
    --- server1 ---:
      a: null
  mkfs_opts: -f -i size=2048
  mons:
    --- server1 ---:
      a: --- IP Address --:6789
  mount_opts: -o inode64,noatime,logbsize=256k
  osds:
  - --- server1 ---
  osds_per_node: 8
  pdsh_ssh_args: -a -x -l%u %h
  rados_cmd: /usr/bin/rados
  rbd_cmd: /usr/bin/rbd
  tmp_dir: /tmp/cbt
  use_existing: true
  user: ljsanders
monitoring_profiles:
  collectl:
    args: -c 18 -sCD -i 10 -P -oz -F0 --rawtoo --sep ";" -f {collectl_dir}
```