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TKperf Test Report

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1 Setup Information

Tested Device:

- Model Number: WDC WD4000FYYZ-01UL1B0
- Serial Number: WD-WMC130105269
- Firmware Revision: 01.01K01
- device size with M = 1000*1000: 4000787 MBytes (4000 GB)
- write-caching = 1 (on)

Used command line:

- `/usr/local/bin/tkperf hdd wd4000 /dev/sdc -nj 2 -iod 16`

Performance System:

- TKperf Version: 1.1
- Fio Version: fio-2.0.14
- Date of test run: 2013-03-29
- Number of jobs: 2
- Number of outstanding IOs (iodepth): 16

Operating System:

- Kernel Version: 3.2.0-38-generic
- Description: Ubuntu 12.04.2 LTS

2 General Information

- *workloads*: The percentage of read operations in the random mixed workload. In the plots the term "100/00" means 100% read and 0% write, "95/5" 95% read and 5% write, and so on.
- *block sizes*: The block size of Fio to be used for IO operations.
- *round*: As an hdd's performance is different at outer and inner side, the device is divided into equal size parts. In every round one part of the device is tested

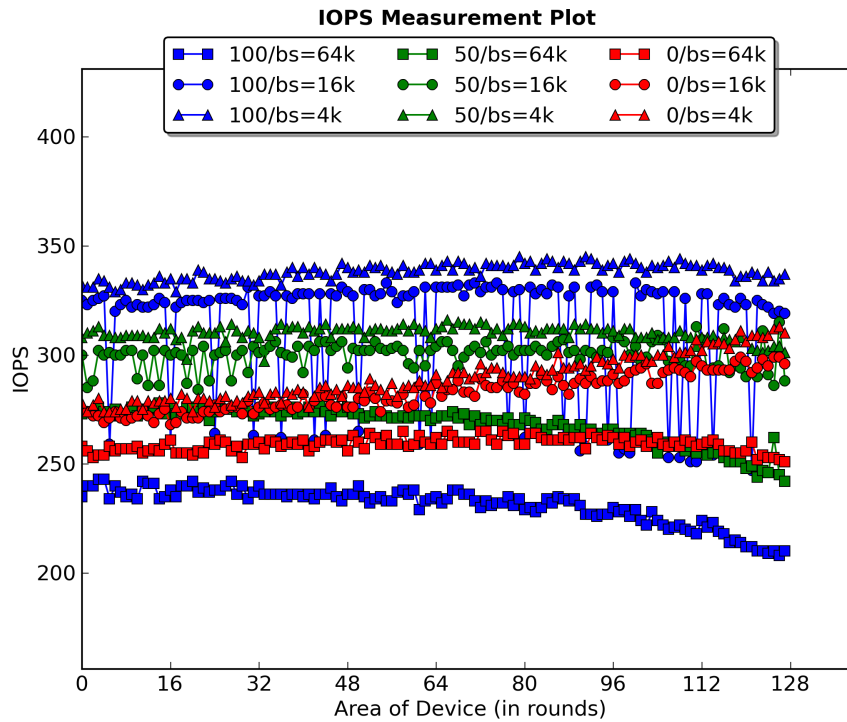
3 IOPS

The IOPS test consists of looping over the following parameters:

```
Divide device in 128 parts
For range(128)
    For workloads [100, 50, 0]
        For block sizes ['64k', '16k', '4k']
```

Each combination of workload and block size is carried out for 60 seconds using direct IO. The IOPS of one round are an indicator for the random performance of the corresponding area.

3.1 Measurement Plots



The Measurement Plot shows the IOPS of each one-128th part of the disk. For every workload the IOPS of all block sizes are plotted.

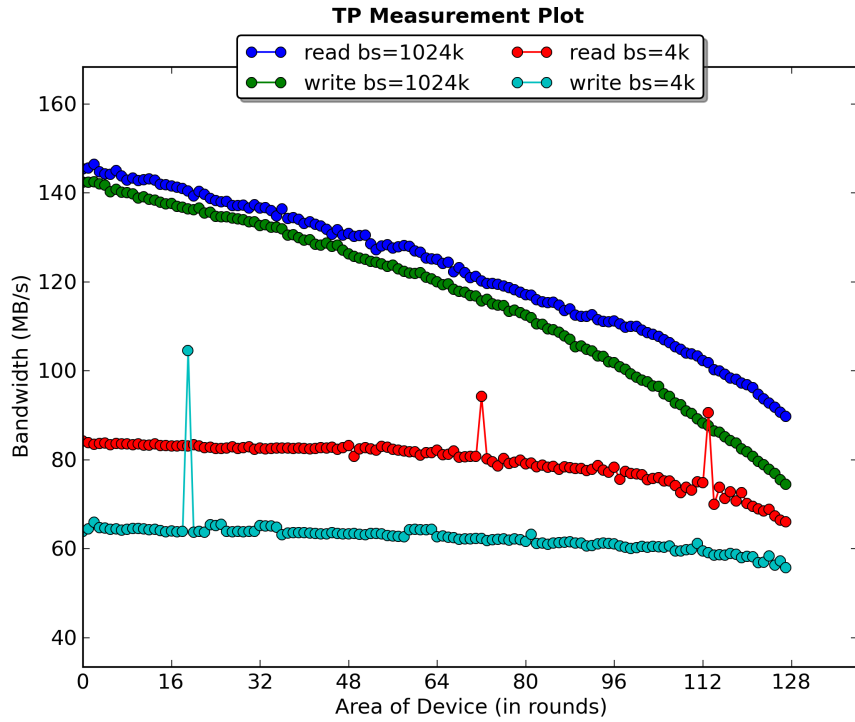
4 Throughput

The throughput test consists of looping over the following parameters:

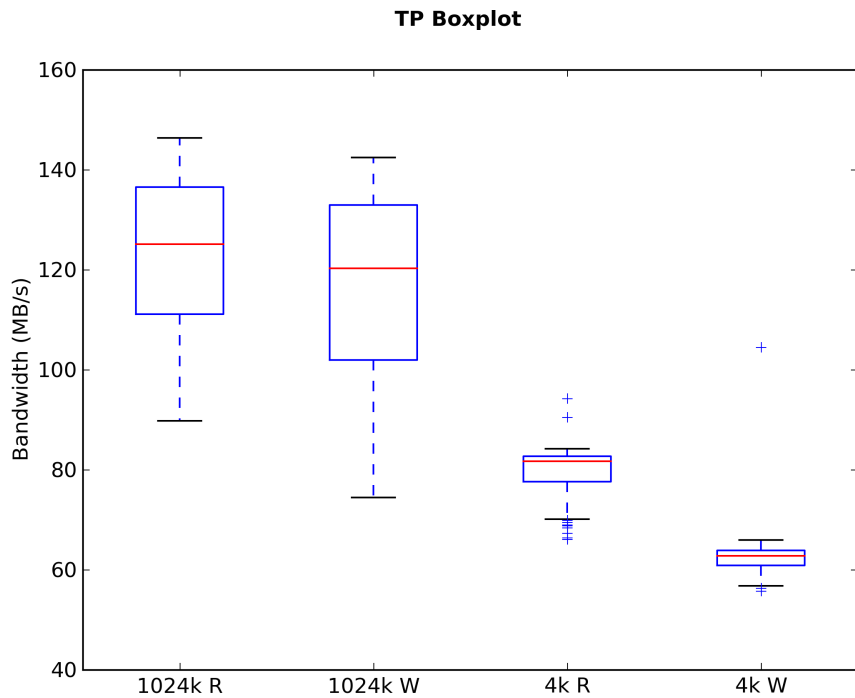
```
For block sizes ['1024k', '4k']
  For range(128)
    Sequential read
    Sequential write
```

For each block size, every area of the device (this are the rounds) is tested with sequential read and write using direct IO.

4.1 Measurement Plots



The Measurement Plot shows the bandwidth of reads and writes in each one-128th part of the disk. For all block sizes the seq. read and write bandwidth is plotted.



The Boxplot shows minimum, lower quartile, median, upper quartile and maximum. For all block sizes the seq. read and write data is plotted.