ZFS-600 Data Sheet

Memory Performance

2.1 STREAM Memory Benchmark

This subsection presents the results of STREAM, a synthetic benchmark program that measures sustainable memory bandwidth. Fig. 2.1 shows the bandwidth of each unit. Table 2.1 lists the details.

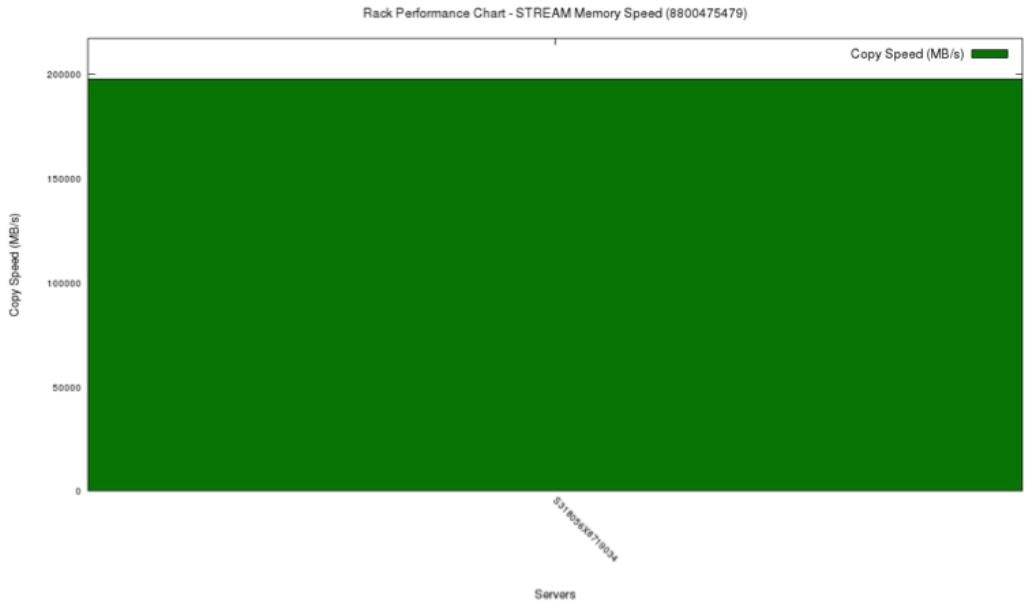
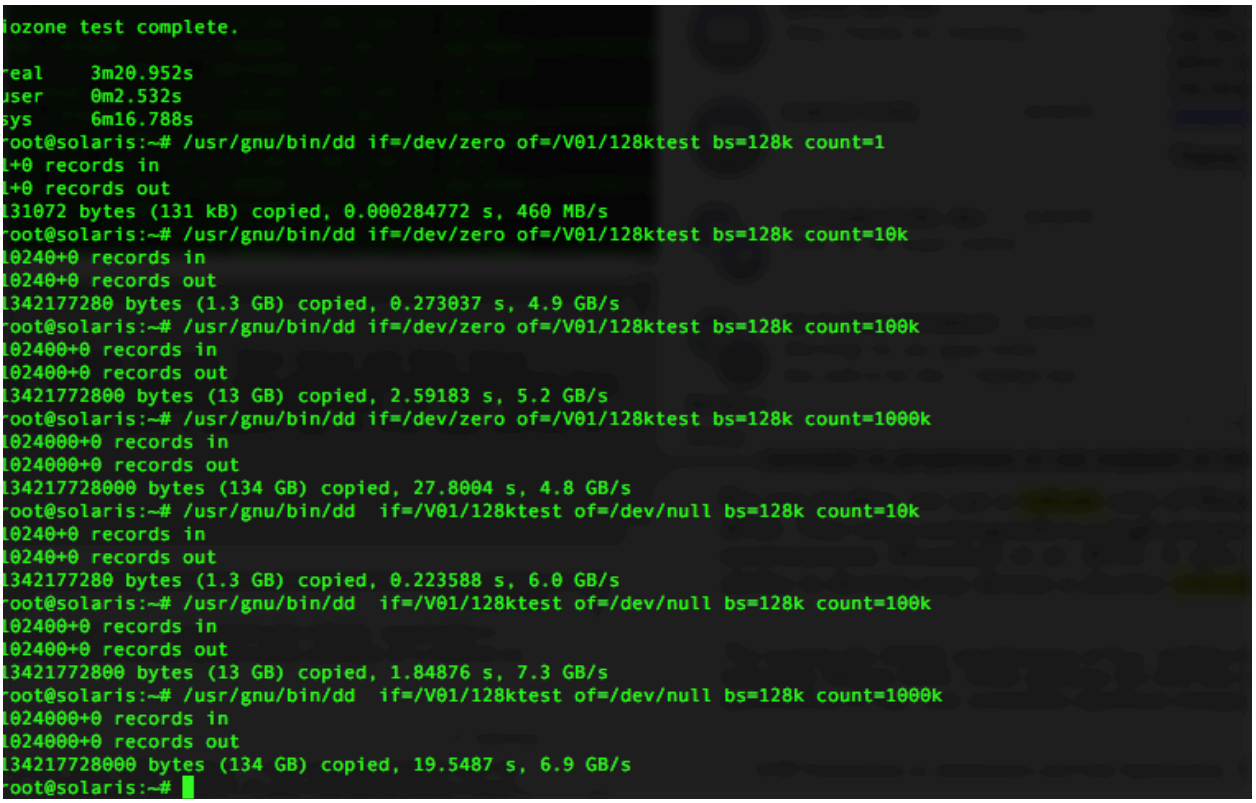


Fig. 2.1: STREAM memory bandwidth benchmark results

Table 2.1: STREAM benchmark results

#	Bandwidth	Time
1	197469.8 MB/s	0.00009 s

Disk read/write performance single thread
dd test 7.3GB/sec



Multithreaded disk performance tested with iozone 14GB/sec read (not cached)
24GB/sec read cached

```
        File size set to 67108864 kB
        Record Size 128 kB
        CPU utilization Resolution = 0.000 seconds.
        CPU utilization Excel chart enabled
        Excel chart generation enabled
        Command line used: /opt/csw/bin/iozone -S 12288 -s 64g -r 128k -+u -R -b iz.rpool.rpool-tempcheck-preheatsink-4x64-8k.128k.t4.test0.test1.20180824-103111.xls
/iozone/multi/1/f1 /V01/iozone/multi/2/f2 /V01/iozone/multi/3/f3 /V01/iozone//multi/4/f4
        Output is in kBytes/sec
        Time Resolution = 0.000001 seconds.
        Processor cache size set to 12288 kBytes.
        Processor cache line size set to 32 bytes.
        File stride size set to 17 * record size.
        Throughput test with 4 processes
        Each process writes a 67108864 kByte file in 128 kByte records

        Children see throughput for  4 initial writers  = 5006913.75 kB/sec
        Parent sees throughput for  4 initial writers   = 4132955.09 kB/sec
        Min throughput per process                      = 1227032.62 kB/sec
        Max throughput per process                      = 1270364.62 kB/sec
        Avg throughput per process                      = 1251728.44 kB/sec
        Min xfer                                        = 64818944.00 kB
        CPU Utilization: Wall time   53.596    CPU time   94.083    CPU utilization 175.54 %


        Children see throughput for  4 rewriters        = 5250083.25 kB/sec
        Parent sees throughput for  4 rewriters         = 3716043.55 kB/sec
        Min throughput per process                      = 1293127.00 kB/sec
        Max throughput per process                      = 1355056.25 kB/sec
        Avg throughput per process                      = 1312520.81 kB/sec
        Min xfer                                        = 64042112.00 kB
        CPU utilization: Wall time   49.525    CPU time   94.447    CPU utilization 190.70 %


        Children see throughput for  4 readers          = 14768383.25 kB/sec
        Parent sees throughput for  4 readers           = 14731990.03 kB/sec
        Min throughput per process                      = 3620685.25 kB/sec
        Max throughput per process                      = 3798510.50 kB/sec
        Avg throughput per process                      = 3692095.81 kB/sec
        Min xfer                                        = 63965568.00 kB
        CPU utilization: Wall time   17.744    CPU time   46.383    CPU utilization 261.41 %


        Children see throughput for 4 re-readers        = 24173541.50 kB/sec
        Parent sees throughput for 4 re-readers         = 24161559.63 kB/sec
        Min throughput per process                      = 5674086.50 kB/sec
        Max throughput per process                      = 6265120.00 kB/sec
        Avg throughput per process                      = 6043385.38 kB/sec
        Min xfer                                        = 60780416.00 kB
        CPU utilization: Wall time   10.716    CPU time   40.424    CPU utilization 377.22 %



"Throughput report Y-axis is type of test X-axis is number of processes"
"Record size = 128 kBytes "
"Output is in kBytes/sec"

"  Initial write " 5006913.75

"        Rewrite " 5250083.25

"           Read " 14768383.25

"        Re-read " 24173541.50


"CPU utilization report Y-axis is type of test X-axis is number of processes"
"Record size = 128 kBytes "
"Output is in CPU%"

"  Initial write "     175.54

"        Rewrite "     190.70

"           Read "     261.41

"        Re-read "     377.22


iozone test complete.
```