

## 1) CPU Benchmarking

```
ubuntu@ip-172-31-63-47: ~  
  
Starting CPU Benchmarking (IOPS) for 1 thread(s)  
Time Taken : 2.094760  
Number of FLOPS : 9547633141.744162  
Number of GFLOPS : 9.547633  
  
Starting CPU Benchmarking (IOPS) for 2 thread(s)  
Time Taken : 4.192235  
Number of FLOPS : 9541449847.157900  
Number of GFLOPS : 9.541450  
  
Starting CPU Benchmarking (IOPS) for 4 thread(s)  
Time Taken : 8.395716  
Number of FLOPS : 9528669145.073511  
Number of GFLOPS : 9.528669  
  
Starting CPU Benchmarking (FLOPS) for 1 thread(s)  
Time Taken : 2.476833  
Number of FLOPS : 8074827814.390392  
Number of GFLOPS : 8.074828  
  
Starting CPU Benchmarking (FLOPS) for 2 thread(s)  
Time Taken : 4.966931  
Number of FLOPS : 8053262668.637837  
Number of GFLOPS : 8.053263  
  
Starting CPU Benchmarking (FLOPS) for 4 thread(s)  
Time Taken : 10.237301  
Number of FLOPS : 7814559716.472144  
Number of GFLOPS : 7.814560  
  
█
```

## 2) Memory Benchmarking

```
ubuntu@ip-172-31-29-240: ~  
ubuntu@ip-172-31-29-240:~$ ./runMemory.sh  
  
Starting Memory Benchmarking for 1 thread(s)  
Sequential Read  
Block Size : 1  
Iterations : 100000000  
Time Taken : 946.894000 mSecs  
Latency : 9.468940 mSec/mb  
ThroughPut : 105.608442 mb/sec  
  
Random Read  
Block Size : 1  
Iterations : 100000000  
Time Taken : 11469.152000 mSecs  
Latency : 114.691520 mSec/mb  
ThroughPut : 8.719040 mb/sec  
  
Starting Memory Benchmarking for 2 thread(s)  
Sequential Read  
Block Size : 1  
Iterations : 100000000  
Time Taken : 1825.283000 mSecs  
Latency : 9.126415 mSec/mb  
ThroughPut : 109.572050 mb/sec  
  
Random Read  
Block Size : 1  
Iterations : 100000000  
Time Taken : 22630.341000 mSecs  
Latency : 113.151705 mSec/mb  
ThroughPut : 8.837693 mb/sec  
  
Starting Memory Benchmarking for 1 thread(s)  
Sequential Read  
Block Size : 1024  
Iterations : 100000  
Time Taken : 32.446000 mSecs  
Latency : 0.316855 mSec/mb  
ThroughPut : 3156.013068 mb/sec  
  
Random Read  
Block Size : 1024  
Iterations : 100000  
Time Taken : 45.413000 mSecs  
Latency : 0.443486 mSec/mb  
ThroughPut : 2254.860943 mb/sec  
  
Starting Memory Benchmarking for 2 thread(s)  
Sequential Read  
Block Size : 1024  
Iterations : 100000  
Time Taken : 43.478000 mSecs  
Latency : 0.212295 mSec/mb  
ThroughPut : 4710.428263 mb/sec
```

ubuntu@ip-172-31-29-240: ~

Latency : 0.316855 mSec/mb  
ThroughPut : 3156.013068 mb/sec

Random Read  
Block Size : 1024  
Iterations : 100000  
Time Taken : 45.413000 mSecs  
Latency : 0.443486 mSec/mb  
ThroughPut : 2254.860943 mb/sec

Starting Memory Benchmarking for 2 thread(s)

Sequential Read  
Block Size : 1024  
Iterations : 100000  
Time Taken : 43.478000 mSecs  
Latency : 0.212295 mSec/mb  
ThroughPut : 4710.428263 mb/sec

Random Read  
Block Size : 1024  
Iterations : 100000  
Time Taken : 89.189000 mSecs  
Latency : 0.435493 mSec/mb  
ThroughPut : 2296.247295 mb/sec

Starting Memory Benchmarking for 1 thread(s)

Sequential Read  
Block Size : 1048576  
Iterations : 100  
Time Taken : 29.298000 mSecs  
Latency : 0.279408 mSec/mb  
ThroughPut : 3579.001980 mb/sec

Random Read  
Block Size : 1048576  
Iterations : 100  
Time Taken : 14.254000 mSecs  
Latency : 0.135937 mSec/mb  
ThroughPut : 7356.363126 mb/sec

Starting Memory Benchmarking for 2 thread(s)

Sequential Read  
Block Size : 1048576  
Iterations : 100  
Time Taken : 40.578000 mSecs  
Latency : 0.193491 mSec/mb  
ThroughPut : 5168.199517 mb/sec

Random Read  
Block Size : 1048576  
Iterations : 100  
Time Taken : 28.192000 mSecs  
Latency : 0.134430 mSec/mb  
ThroughPut : 7438.819523 mb/sec

ubuntu@ip-172-31-29-240:~\$

### 3) Disk Benchmarking

```
ubuntu@ip-172-31-29-240: ~  
ubuntu@ip-172-31-29-240:~$ ./runDisk.sh  
  
Starting Disk Write Benchmarking for 1 thread(s)  
Sequential Write  
Block Size : 1  
Iterations : 100000000  
File Name : temp1  
Time Taken : 2907.175000 mSecs  
Latency : 29.071750 mSec/mb  
ThroughPut : 34.397654 mb/sec  
  
Random Write  
Block Size : 1  
Iterations : 100000000  
File Name : temp1_rand  
Time Taken : 117142.164000 mSecs  
Latency : 1171.421640 mSec/mb  
ThroughPut : 0.853664 mb/sec  
  
Starting Disk Write Benchmarking for 2 thread(s)  
Sequential Write  
Block Size : 1  
Iterations : 100000000  
File Name : temp2  
Time Taken : 5821.622000 mSecs  
Latency : 29.108110 mSec/mb  
ThroughPut : 34.354687 mb/sec  
  
Random Write  
Block Size : 1  
Iterations : 100000000  
File Name : temp2_rand  
Time Taken : 260669.119000 mSecs  
Latency : 1303.345595 mSec/mb  
ThroughPut : 0.767256 mb/sec  
  
Starting Disk Write Benchmarking for 1 thread(s)  
Sequential Write  
Block Size : 1024  
Iterations : 100000  
File Name : temp3  
Time Taken : 68.681000 mSecs  
Latency : 0.670713 mSec/mb  
ThroughPut : 1490.950918 mb/sec  
  
Random Write  
Block Size : 1024  
Iterations : 100000  
File Name : temp3_rand  
Time Taken : 168.497000 mSecs  
Latency : 1.645479 mSec/mb  
ThroughPut : 607.725954 mb/sec  
  
Starting Disk Write Benchmarking for 2 thread(s)  
Sequential Write
```

ubuntu@ip-172-31-29-240: ~

Starting Disk Write Benchmarking for 2 thread(s)

Sequential Write

Block Size : 1024

Iterations : 100000

File Name : temp4

Time Taken : 143.324000 mSecs

Latency : 0.699824 mSec/mb

ThroughPut : 1428.930256 mb/sec

Random Write

Block Size : 1024

Iterations : 100000

File Name : temp4\_rand

Time Taken : 339.694000 mSecs

Latency : 1.658662 mSec/mb

ThroughPut : 602.895547 mb/sec

Starting Disk Write Benchmarking for 1 thread(s)

Sequential Write

Block Size : 1048576

Iterations : 100

File Name : temp5

Time Taken : 57.482000 mSecs

Latency : 0.548191 mSec/mb

ThroughPut : 1824.181483 mb/sec

Random Write

Block Size : 1048576

Iterations : 100

File Name : temp5\_rand

Time Taken : 57.721000 mSecs

Latency : 0.550470 mSec/mb

ThroughPut : 1816.628264 mb/sec

Starting Disk Write Benchmarking for 2 thread(s)

Sequential Write

Block Size : 1048576

Iterations : 100

File Name : temp6

Time Taken : 113.642000 mSecs

Latency : 0.541887 mSec/mb

ThroughPut : 1845.402228 mb/sec

Random Write

Block Size : 1048576

Iterations : 100

File Name : temp6\_rand

Time Taken : 115.070000 mSecs

Latency : 0.548697 mSec/mb

ThroughPut : 1822.501086 mb/sec

Starting Disk Read Benchmarking for 1 thread(s)

Sequential Read

Block Size : 1

Iterations : 100000000

ubuntu@ip-172-31-29-240: ~

Starting Disk Read Benchmarking for 1 thread(s)

Sequential Read

Block Size : 1

Iterations : 100000000

File Name : temp1

Time Taken : 3139.058000 mSecs

Latency : 31.390580 mSec/mb

ThroughPut : 31.856691 mb/sec

Random Read

Block Size : 1

Iterations : 100000000

File Name : temp1\_rand

Time Taken : 33051.244000 mSecs

Latency : 330.512440 mSec/mb

ThroughPut : 3.025605 mb/sec

Starting Disk Read Benchmarking for 2 thread(s)

Sequential Read

Block Size : 1

Iterations : 100000000

File Name : temp2

Time Taken : 6227.178000 mSecs

Latency : 31.135890 mSec/mb

ThroughPut : 32.117277 mb/sec

Random Read

Block Size : 1

Iterations : 100000000

File Name : temp2\_rand

Time Taken : 66775.969000 mSecs

Latency : 333.879845 mSec/mb

ThroughPut : 2.995089 mb/sec

Starting Disk Read Benchmarking for 1 thread(s)

Sequential Read

Block Size : 1024

Iterations : 100000

File Name : temp3

Time Taken : 38.290000 mSecs

Latency : 0.373926 mSec/mb

ThroughPut : 2674.327501 mb/sec

Random Read

Block Size : 1024

Iterations : 100000

File Name : temp3\_rand

Time Taken : 46.847000 mSecs

Latency : 0.457490 mSec/mb

ThroughPut : 2185.839008 mb/sec

Starting Disk Read Benchmarking for 2 thread(s)

Sequential Read

Block Size : 1024

Iterations : 100000

ubuntu@ip-172-31-29-240: ~

File Name : temp3\_rand  
Time Taken : 46.847000 mSecs  
Latency : 0.457490 mSec/mb  
ThroughPut : 2185.839008 mb/sec

Starting Disk Read Benchmarking for 2 thread(s)

Sequential Read  
Block Size : 1024  
Iterations : 100000  
File Name : temp4  
Time Taken : 60.217000 mSecs  
Latency : 0.294028 mSec/mb  
ThroughPut : 3401.032931 mb/sec

Random Read  
Block Size : 1024  
Iterations : 100000  
File Name : temp4\_rand  
Time Taken : 94.525000 mSecs  
Latency : 0.461548 mSec/mb  
ThroughPut : 2166.622587 mb/sec

Starting Disk Read Benchmarking for 1 thread(s)

Sequential Read  
Block Size : 1048576  
Iterations : 100  
File Name : temp5  
Time Taken : 33.674000 mSecs  
Latency : 0.321140 mSec/mb  
ThroughPut : 3113.903902 mb/sec

Random Read  
Block Size : 1048576  
Iterations : 100  
File Name : temp5\_rand  
Time Taken : 9.256000 mSecs  
Latency : 0.088272 mSec/mb  
ThroughPut : 11328.608470 mb/sec

Starting Disk Read Benchmarking for 2 thread(s)

Sequential Read  
Block Size : 1048576  
Iterations : 100  
File Name : temp6  
Time Taken : 46.100000 mSecs  
Latency : 0.219822 mSec/mb  
ThroughPut : 4549.136659 mb/sec

Random Read  
Block Size : 1048576  
Iterations : 100  
File Name : temp6\_rand  
Time Taken : 16.976000 mSecs  
Latency : 0.080948 mSec/mb  
ThroughPut : 12353.628652 mb/sec  
ubuntu@ip-172-31-29-240:~\$

## 4) Linpack

```
ubuntu@ip-172-31-43-47:~$  
sed: can't read /usr/sbin/runme_xeon64: No such file or directory  
--2016-02-11 00:12:13-- http://registrationcenter.intel.com/irc_nas/3014/1_lpk_p_11.1.1.2.005.tgz  
Resolving registrationcenter.intel.com (registrationcenter.intel.com)... 192.198.164.124  
Connecting to registrationcenter.intel.com (registrationcenter.intel.com)|192.198.164.124|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 27931816 (27M) [application/x-compressed]  
Saving to: '/tmp/1_lpk.tgz'  
100%[----->] 27,931,818  949KB/s  in 29s  
  
2016-02-11 00:12:06 (933 KB/s) - '/tmp/1_lpk.tgz' saved [27931816/27931816]  
  
This is a SAMPLE run script for SMP LINPACK. Change it to reflect  
the correct number of CPUs/threads, problem input files, etc..  
Thu Feb 11 00:17:07 UTC 2016  
Intel(R) Optimized LINPACK Benchmark data  
  
Current date/time: Thu Feb 11 00:17:07 2016  
  
CPU frequency: 2.813 GHz  
Number of CPUs: 1  
Number of cores: 1  
Number of threads: 1  
  
Parameters are set to:  
  
Number of tests: 15  
Number of equations to solve (problem size) : 1000 2000 5000 10000 15000 18000 20000 22000 25000 26000 27000 30000 35000 40000 45000  
Leading dimension of array : 1000 2000 5000 10000 15000 18000 20016 22008 25000 26000 27000 30000 35000 40000 45000  
Number of trials to run : 4 2 2 2 2 2 2 2 2 2 1 1 1 1 1  
Data alignment value (in Kbytes) : 4 4 4 4 4 4 4 4 4 4 1 1 1 1 1  
  
Maximum memory requested that can be used=800204096, at the size=10000  
  
===== Timing linear equation system solver =====  
  
Size LDA Align. Time(s) GFlops Residual Residual(norm) Check  
1000 1000 4 0.040 16.7480 9.900691e-13 3.376390e-02 pass  
1000 1000 4 0.038 17.7403 9.900691e-13 3.376390e-02 pass  
1000 1000 4 0.037 19.1753 9.900691e-13 3.376390e-02 pass  
1000 1000 4 0.037 19.0819 9.900691e-13 3.376390e-02 pass  
2000 2000 4 0.275 19.3923 4.033480e-12 3.526031e-02 pass  
2000 2000 4 0.269 19.8360 4.033480e-12 3.526031e-02 pass  
5000 5000 4 3.989 20.9029 2.336047e-11 3.257429e-02 pass  
5000 5000 4 3.697 21.3990 2.336047e-11 3.257429e-02 pass  
10000 10000 4 20.666 21.7463 1.124127e-10 3.963706e-02 pass  
10000 10000 4 32.070 20.7940 1.124127e-10 3.963706e-02 pass  
  
Performance Summary (GFlops)  
  
Size LDA Align. Average Maximal  
1000 1000 4 17.6964 19.1753  
2000 2000 4 19.6142 19.8360  
5000 5000 4 21.1510 21.9990  
10000 10000 4 21.2702 21.7463  
  
Residual checks PASSED  
  
End of tests  
  
Done: Thu Feb 11 00:28:32 UTC 2016  
ubuntu@ip-172-31-43-47:~$  
ubuntu@ip-172-31-43-47:~$
```



## 5) STREAM

ubuntu@ip-172-31-50-207: ~

```
ubuntu@ip-172-31-50-207:~$ ./stream.sh
```

```
-----  
STREAM version $Revision: 5.10 $  
-----
```

```
This system uses 8 bytes per array element.  
-----
```

```
Array size = 10000000 (elements), Offset = 0 (elements)
```

```
Memory per array = 76.3 MiB (= 0.1 GiB).
```

```
Total memory required = 228.9 MiB (= 0.2 GiB).
```

```
Each kernel will be executed 10 times.
```

```
  The *best* time for each kernel (excluding the first iteration)  
  will be used to compute the reported bandwidth.  
-----
```

```
Your clock granularity/precision appears to be 1 microseconds.
```

```
Each test below will take on the order of 28747 microseconds.
```

```
(= 28747 clock ticks)
```

```
Increase the size of the arrays if this shows that  
you are not getting at least 20 clock ticks per test.  
-----
```

```
WARNING -- The above is only a rough guideline.
```

```
For best results, please be sure you know the  
precision of your system timer.  
-----
```

Function	Best Rate MB/s	Avg time	Min time	Max time
Copy:	5548.2	0.028954	0.028838	0.029063
Scale:	5414.8	0.029697	0.029549	0.030000
Add:	7750.2	0.031176	0.030967	0.031589
Triad:	7279.6	0.033083	0.032969	0.033219

```
-----
```

```
Solution Validates: avg error less than 1.000000e-13 on all three arrays  
-----
```

```
ubuntu@ip-172-31-50-207:~$ █
```

## 6) IOZone

```
ubuntu@ip-172-31-29-240:~/iozone3.984/src/current
iozone: Performance Test of File I/O
Version: Revision 3.984
Compiled for 64 bit mode.
Build: linux

Contributors: William Norcott, Don Capps, Iason Crawford, Kirby Collins
Al Slater, Scott Haine, Mike Winner, Ken Goss
Steve Lambert, Brad Smith, Mark Kelly, Dr. Alan CWR,
Randy Dunlap, Mark Montague, Dan Million, Gavin Brenner,
Jean-Marc Zucconi, Jeff Blomberg, Benny Balenty, Dave Boone,
Erik Hobbins, Kris Brueker, Walter Wong, Joshua Root,
Fabrice Bacchella, Zhenghua Xue, Qin Li, Darren Sawyer,
Ben England.

Run began: Wed Feb 10 21:31:38 2016

Auto Mode
Command line used: ./iozone -a
Output is in bytes/sec
Time Resolution = 0.000001 seconds.
Processor cache size set to 1024 Kbytes.
Processor cache line size set to 32 bytes.
File stride size set to 17 * record size.

Random read random write random read random write random read random write
MB read write rewrite read read write read write read write read write read write
64 4 131063 336412 12902017 12902017 7940539 3738358 4897848 336412 10821524 3541098 3738358 4421025 12902017
64 8 1355511 4274062 15972885 15972885 10821524 4274062 4421025 4897848 12310336 4274062 4274062 4421025 9006179
64 16 531452 1364161 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885
64 32 1599680 4274062 15972885 15972885 3022727 2006158 5735102 4564786 9006179 3203069 7100397 9318832 12310336
64 64 1304314 4897848 22737791 20862191 12902017 4897848 4421025 4897848 1486662 4274062 4564786 7940539 7940539
128 4 1538714 336412 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885 15972885
128 8 1217930 3657016 11470204 14200794 12342051 4274062 4406138 4759253 11470204 3468030 4407601 8548124 12842051
128 16 1484066 336412 14200794 14200794 12342051 4897848 7940539 5052623 9708206 3468030 4407601 9977904 10616140
128 32 1654006 336412 14200794 15801075 14200794 5327952 5552112 5545860 14200794 4952416 5357769 9758996 10775307
128 64 1878447 4567557 15801075 15801075 12342051 5327952 5548124 5847904 8036304 3277486 6727225 9758996 14200794
128 128 1227239 9758996 15801075 15801075 12342051 5327952 5548124 5847904 8036304 3277486 6727225 9758996 14200794
256 4 1707849 4044829 11569783 12228612 9778662 3878048 8204677 5117791 8279136 3236086 4044829 9864483 10245071
256 8 2135550 4652146 14164395 16074081 1232277 4946289 9518507 6761355 10651598 4197489 45728551 1092721 12812277
256 16 2149319 5022064 14164395 15146462 1212277 4946289 9518507 6761355 10651598 4197489 45728551 1092721 12812277
256 32 2463808 8247734 11091721 14164395 14164395 4044829 10245071 5458847 8815020 3605811 5022064 11207494 12090911
256 64 2413957 5302672 12461139 15146462 13484460 5302672 11207494 5810112 13484460 4928815 5811721 13484460 12228612
256 128 2747935 12461139 15146462 13484460 5302672 11207494 5810112 13484460 4928815 5811721 13484460 12228612
256 256 1451531 9117785 12812277 13625180 9114515 4928815 9114515 4919184 10245071 5142301 3984490 11207494 12228612
512 4 1854747 4041007 11374040 11877300 9510316 3742527 6808176 5331314 8140389 4030519 4030519 9438369 10914949
512 8 2416145 4041007 11374040 10914949 12797441 3878048 6162115 4625064 11374040 4701087 4650181 9438369 1462067
512 16 1776533 5227492 11374040 15037801 12499480 5866231 11080601 6319739 11138071 4701087 4972631 7797441 1462067
512 32 2178404 5893343 13872122 15037801 13872122 5866231 9438369 4672112 13109944 4827934 5115422 9438369 14240609
512 64 2488000 5566231 14240609 15037801 12499480 5866231 6371152 6033351 12499480 4782747 5502132 9438369 1378308
512 128 2327124 5866231 10811694 14240609 13109944 5866231 9438369 6319739 11873300 517083 5866231 9510136 14240609
512 256 2436212 1717779 11138071 12150971 1138071 5616410 1045419 6016656 943790 3954620 741000 741070 1215097
512 512 1549403 11874040 11874040 15037801 1277441 4972631 10211694 5866231 5533174 5021552 5624552 9774040 14240609
1024 4 1785746 414699 10230845 12173747 2837138 1400327 8460108 5536137 8061038 3021305 3781489 8520497 10230845
1024 8 2270300 1198100 1388422 1516101 1220830 898276 8970147 4650856 1023772 4632839 4720792 992394 1422045
1024 16 1848247 4330252 14947188 1516101 1347203 8464363 11138082 6347746 1207372 4916180 4982412 9774040 1274742
1024 32 2192465 5520511 12883353 11808323 12492426 6021493 13246026 6899461 12492426 4972145 4982412 9774040 1461393
1024 64 2177955 4471007 1388422 1516101 1220830 898276 8970147 4650856 1023772 4632839 4720792 992394 1422045
1024 128 2592316 3804694 11520645 13642321 1305116 8059442 10740973 6915376 14047856 5120336 1496941 9142007 1381871
1024 256 2310655 5277432 9457734 12348754 1173301 5015863 9455232 4699647 12348754 5417427 5917354 11461392 12439479
1024 512 1917461 4277932 12797441 12797441 12797441 12797441 12797441 12797441 12797441 12797441 12797441 12797441 12797441
1024 1024 2202746 1346307 12844224 12173747 1173301 4982412 10740973 5781117 11464609 5858053 5720771 10454994 7869040
2048 4 1822840 384558 10401883 8261095 9246323 1805819 6713805 5784221 5222461 3858782 4054139 8731364 10764850
2048 8 2029850 4054054 13745169 14638464 1264482 11173431 1102234 7286880 4877822 3778989 4878782 4674712 1246953 1311239
```

```
ubuntu@ip-172-31-29-240: ~/icome3_394/src/current
8192 4096 2227274 3227840 9427042 1269852112022997 5461029 7500806 6389610 9112041 4411425 4604748 7307775 10877445
8192 4096 2227274 3227840 9427042 1269852112022997 5461029 7500806 6389610 9112041 4411425 4604748 7307775 10877445
16384 4 1854255 2043300 4504413 8640909 7941872 3522448 5947263 5694918 7529411 3800480 2468075 3258182 7458516
16384 8 1590905 2850670 7355093 10764651108577 4465584 6835371 7373488 8846703 4591765 2853514 3501563 9502395
16384 16 1549673 3056122 7400593 10764651108577 4465584 6835371 7373488 8846703 4591765 2853514 3501563 9502395
16384 32 1593671 3137718 4825871 905810212373403 5411045 7478320 7393320 9024826 4264692 2393696 7499946 9333028
16384 64 2146338 3286628 8038428 1127493933310480 3993183 7802135 7412823 1177610 4820485 3117263 7477462 12126448
16384 128 2087417 3448451 6446328 963963321347958 5793656 7431422 6989928 11138029 4394716 3130337 4683302 7360062
16384 256 2001452 145422 7074413 7467231 8402140 4146770 6983776 6881024 7454271 3083691 2924630 7148742 9619459
16384 512 2121442 3301946 7117444 1003789166161588 3415182 7320588 4540472 8388806 4098054 3041383 7487571 9428573
16384 1024 2103685 3281516 7462905 1047548011460003 5371550 7350140 6503184 12217217 3352485 3178836 7522863 8354133
16384 2048 2025760 3241820 7736235 804696010744459 5141133 7467231 6462967 11579060 3525738 3284644 7447000 9551893
16384 4096 2130776 3364687 8384712 1049420711212539 5097970 7298310 4284471 10448761 4133053 3701001 7474580 8982870
16384 8192 2153267 3218590 8334056 9431964 9711354 4424535 7098328 5165654 8728715 4547155 4563135 6863500 7710135
16384 16384 1852336 3002842 6322125 6809433 7373488 3368468 5705336 3472443 5317690 3161724 3188127 8537048 6927502
32768 64 2051100 3007570 7807343 910263710045351 3770320 7400902 7706853 8602288 3465971 3103596 7050561 8770941
32768 128 2059651 3368452 7631340 8456351 9525977 9025791 7459409 7451071 8000820 3275802 3040383 7470521 7354447
32768 256 2031143 3300187 7013632 7468483 8664959 3470437 7146812 4705002 7704492 3348836 2394675 7278523 7737437
32768 512 2124820 3390300 7302899 7706853 8548859 3871580 7405139 4752442 7986187 3473389 3064973 7480971 8473087
32768 1024 2050239 3383128 7403597 7497588 8700977 3781763 7468272 6411354 8743044 3413715 3012351 3163747 7980242
32768 2048 2030723 3311877 7354458 7773981 7986348 3507392 7390458 4639946 12365394 3204934 3117250 7325855 7943619
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icome test complete.

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