

CSEN 241 Cloud Computing

HW-1
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Operating System	Mac OS Ventura
Memory	16GB
CPU	8 Cores (4 Performance, 4 Efficiency)
Chip	M1

QEMU Setup:

1. Install homebrew and add it to the path
 - a.

```
$ arch -x86_64 /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```
 - b.

```
export PATH="/opt/homebrew/bin:/usr/local/bin:$PATH"
```
2. Install QEMU using the following command:

```
brew install qemu
```
3. Download the ubuntu ISO file for ARM architecture.
4. Create QEMU Image, make sure the ISO file and the image are in same folder.

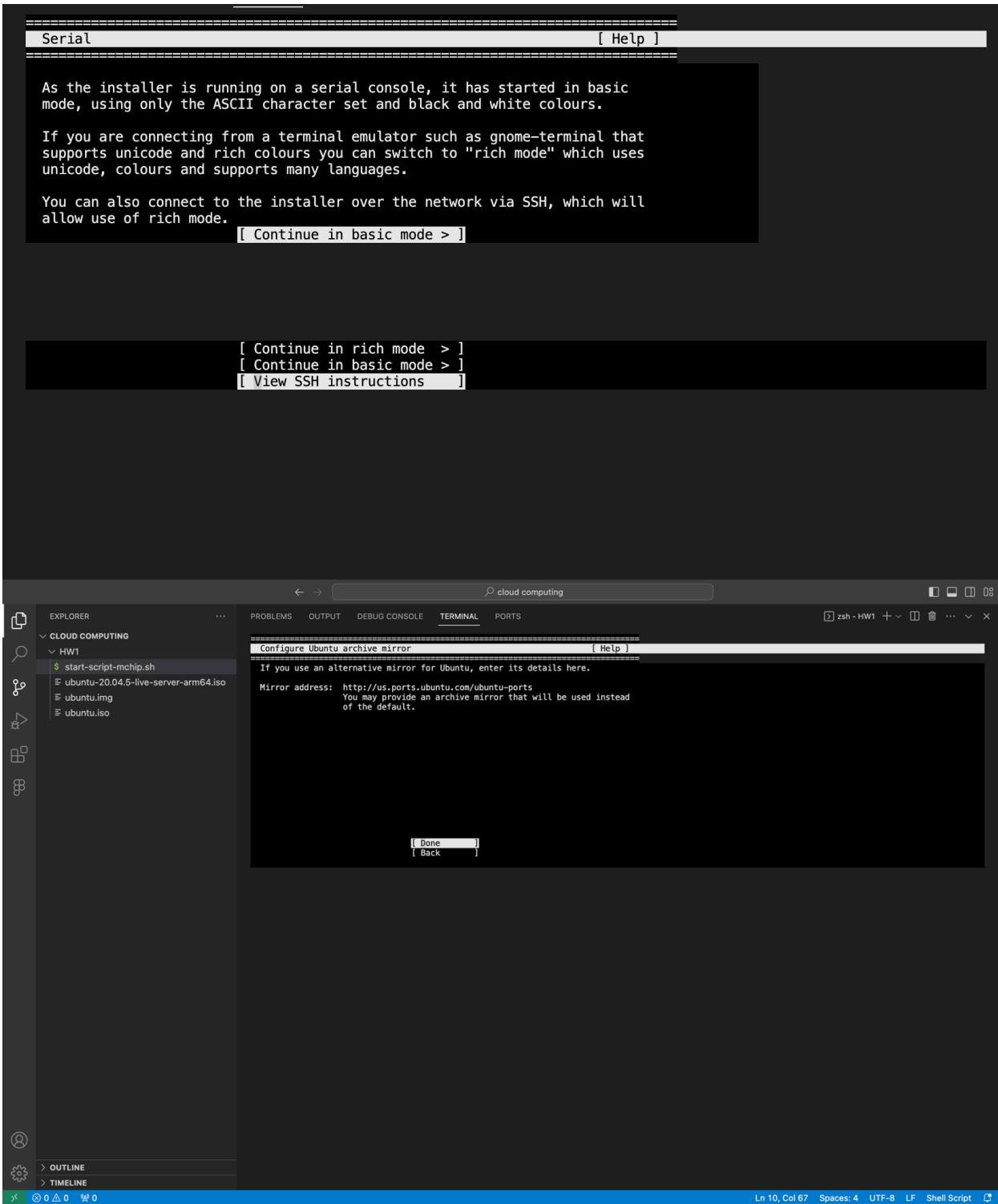
```
Qemu-img create ubuntu-image.img 20G -f qcow2
```
5. Use the below command to create a VM using qemu

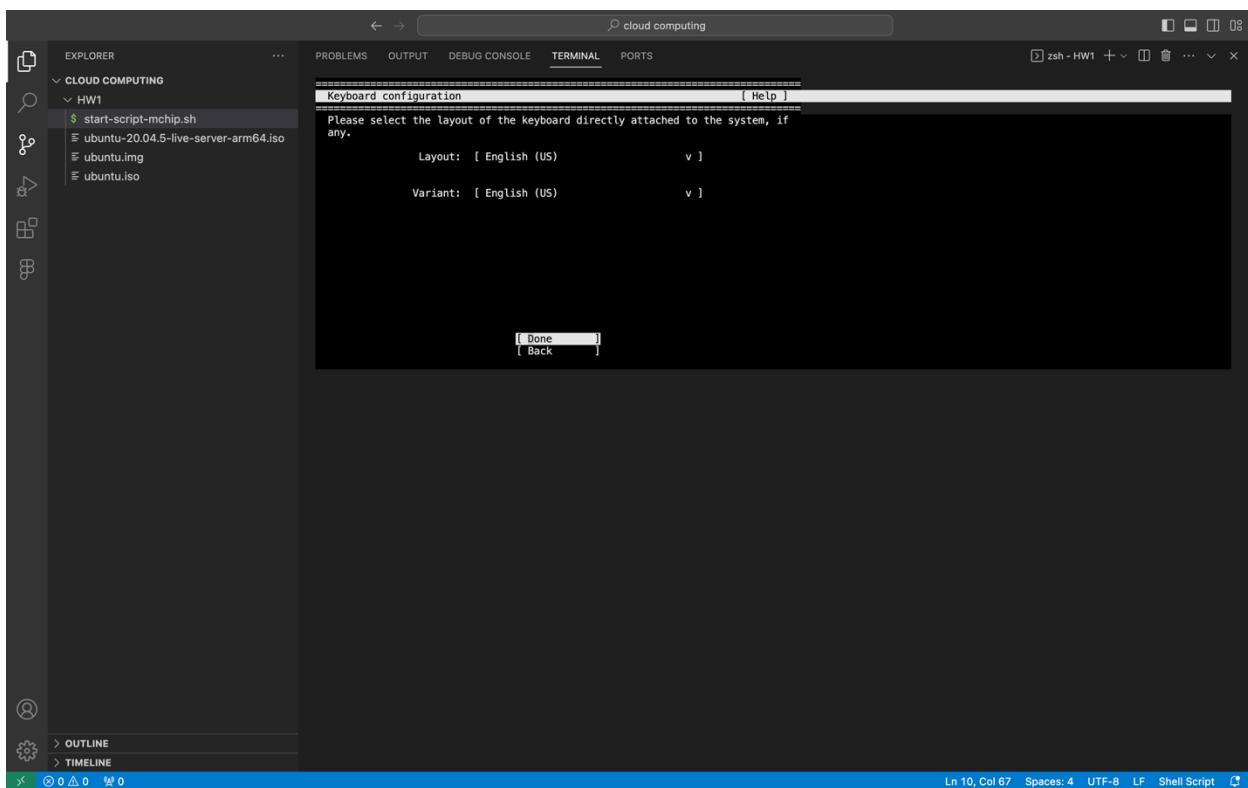
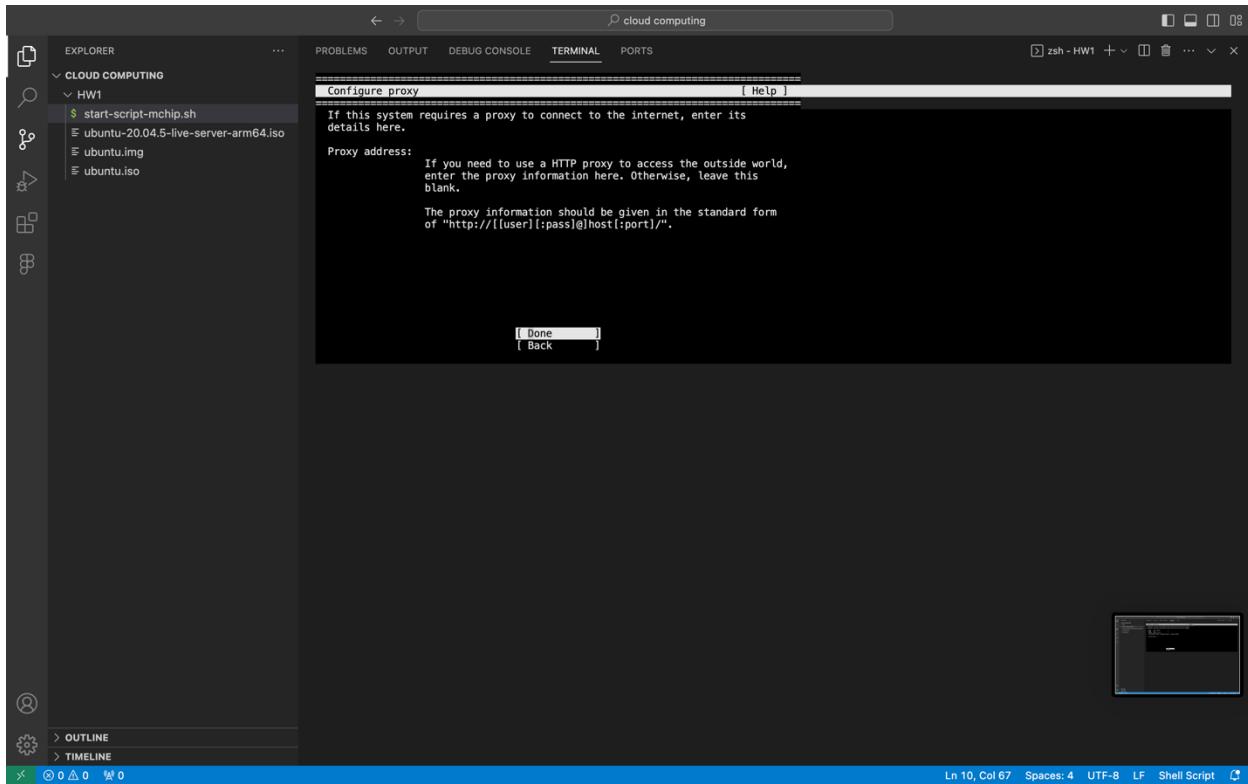
```
sudo /opt/homebrew/bin/qemu-system-aarch64 \
-accel hvf -cpu cortex-a57 -M virt,highmem=off -m 2048 -smp 2 \
-drive file=/opt/homebrew/Cellar/qemu/8.2.0/share/qemu/edk2-aarch64-
code.fd,if=pflash,format=raw,readonly=on \
-drive if=none,file=ubuntu.img,format=qcow2,id=hd0 \
-device virtio-blk-device,drive=hd0,serial="dummyserial" \
-device virtio-net-device,netdev=net0 \
-netdev user,id=net0 \
-vga none -device ramfb \
-cdrom ubuntu-20.04.5-live-server-arm64.iso \
-device usb-ehci -device usb-kbd -device usb-mouse -usb -nographic
```

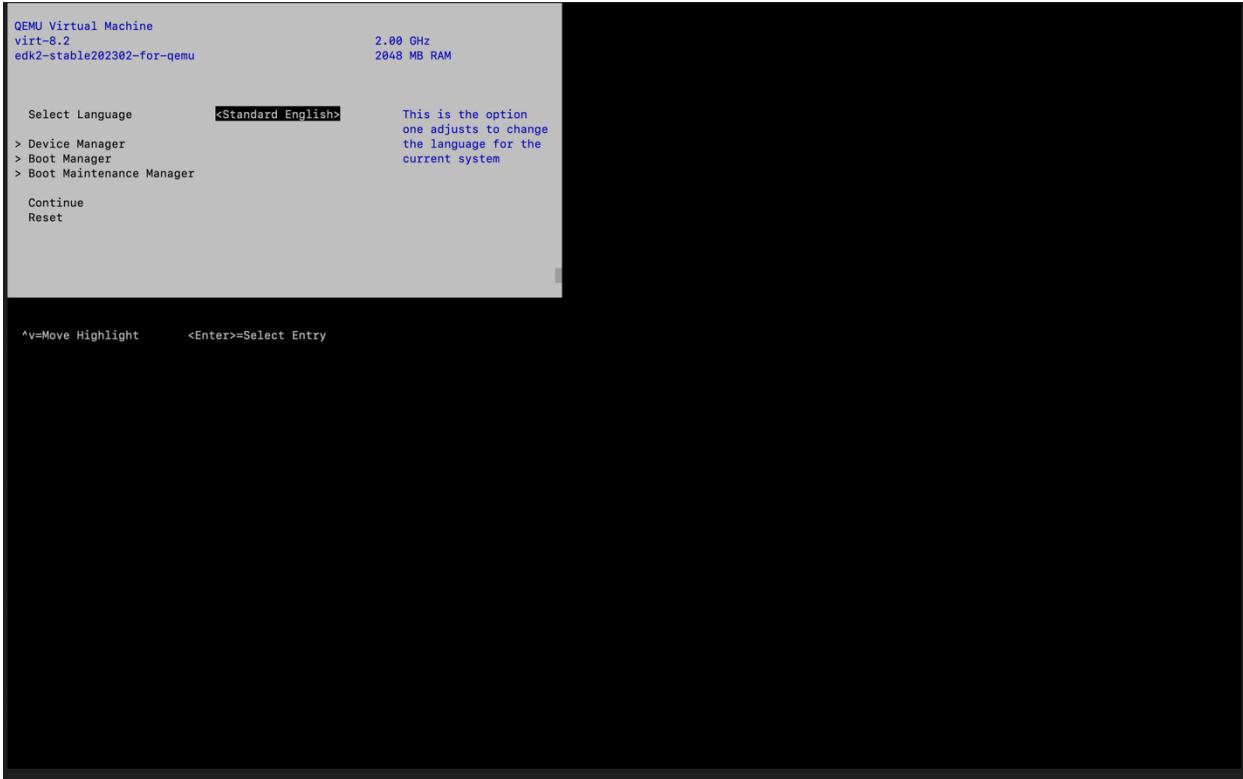
Option	Explanation
-accel	Enables hardware virtualization using the Hypervisor Framework (hvf), available on macOS, for improved performance.
-m	Represents Memory (RAM) to be allocated for the VM. 2G ->2 GB.
-smp	Allocates virtual CPU cores to the machine
-cpu cortex-a57	Simulates an ARM cortex A57 CPU.
-netdev	Defines Network backend of type specified for the Virtual machine
-cdrom	Defines ISO file to be used as a virtual CD-ROM

<code>-nographic</code>	Disables graphical output.
<code>-M virt,highmem=off</code>	Sets the machine type to 'virt', which is a special machine type designed for virtualization, with an option to turn off high memory support.

Screenshots for the installation of Ubuntu







Docker Setup

1. **Installation of Docker:** Install docker using this link <https://docs.docker.com/desktop/install/mac-install/>. This provides us with cli, engine.

To verify the docker installation run below commands

```
docker pull hello-world:latest  
docker images
```

```
docker run hello-world
```

```
[kirankodali@Lokeshs-MacBook-Pro-2 Docker % docker pull hello-world:latest
latest: Pulling from library/hello-world
478afc919002: Pull complete
Digest: sha256:4bd7811b6914a99dbc560e6a20eab57ff6655aea4a80c50b0c5491968cbc2e6
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest
[kirankodali@Lokeshs-MacBook-Pro-2 Docker % docker images
REPOSITORY          TAG      IMAGE ID      CREATED       SIZE
ubuntu-test        latest   33a62c8d9d82  10 hours ago  85.7MB
<none>            <none>  9251f9fd4312  10 hours ago  85.7MB
<none>            <none>  d5b72bd8c2cb  10 hours ago  85.7MB
<none>            <none>  ba80282ee395  10 hours ago  85.7MB
ubuntu-arm-sysbench latest   5e5a8d00505c  20 hours ago  85.7MB
hello-world        latest   ee301c921b8a  9 months ago  9.14kB
[kirankodali@Lokeshs-MacBook-Pro-2 Docker % docker run hello-world
```

```
Hello from Docker!
This message shows that your installation appears to be working correctly.
```

```
To generate this message, Docker took the following steps:
```

1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
(arm64v8)
3. The Docker daemon created a new container from that image which runs the executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it to your terminal.

```
To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash
```

```
Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/
```

```
For more examples and ideas, visit:
https://docs.docker.com/get-started/
```

```
kirankodali@Lokeshs-MacBook-Pro-2 Docker % █
```

Create base ubuntu with sysbench installed

```
CSEN241-Cloud-Computing > HW1 > Docker-sysbench > Dockerfile
1  # Use the specific version of the Ubuntu base image
2  FROM ubuntu:20.04.5
3
4  # Update the package list and install necessary packages
5  RUN apt-get update && \
6  |   apt-get install -y sysbench
7
8  # Set the default command to run sysbench
9  CMD ["sysbench"]
10
```

docker build –t ubuntu-arm-sysbench

docker run ubunutu-arm-sysbench

this will create a new image named ubunutu-arm-sysbench. We will use this image to create our new image

```
CSEN241-Cloud-Computing > HW1 > Docker > Dockerfile
1  # Use your custom sysbench image
2  FROM ubuntu-arm-sysbench
3
4  # Copy scripts
5  COPY tests-script.sh /tests-script.sh
6
7  # Set execution permissions for the scripts
8  RUN chmod +x /tests-script.sh
9
10 # Set the entry point
11 ENTRYPOINT ["/bin/bash","/tests-script.sh"]
12
```

Results

QEMU QCOW2 CPU Test for 2GB Ram, 2 CPU

2GB, 2 cores max-prime=30000

```
1 kirankodali@kirankodali:~$ sysbench --test=cpu --cpu-max-prime=30000 --time=30 run
WARNING: the --test option is deprecated. You can pass a script name or path on the command line without any options.
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2151.35

General statistics:
total time: 30.0132s
total number of events: 64580

Latency (ms):
min: 0.42
avg: 0.46
max: 18.06
95th percentile: 0.44
sum: 29979.41

Threads fairness:
events (avg/stddev): 64580.0000/0.00
execution time (avg/stddev): 29.9794/0.00
```

2

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000
Initializing worker threads...
Threads started!

CPU speed:
  events per second: 2196.26

General statistics:
  total time:          30.0005s
  total number of events: 65899

Latency (ms):
  min:                 0.42
  avg:                 0.45
  max:                14.50
  95th percentile:    0.44
  sum:               29983.70

Threads fairness:
  events (avg/stddev):   65899.0000/0.00
  execution time (avg/stddev): 29.9837/0.00

kirankodali@kirankodali:~$
```

3

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000
Initializing worker threads...
Threads started!

CPU speed:
  events per second: 2167.97

General statistics:
  total time:          30.0004s
  total number of events: 65047

Latency (ms):
  min:                 0.42
  avg:                 0.46
  max:                13.26
  95th percentile:    0.44
  sum:               29980.44

Threads fairness:
  events (avg/stddev):   65047.0000/0.00
  execution time (avg/stddev): 29.9804/0.00

kirankodali@kirankodali:~$
```

4

```
y options:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2153.09

General statistics:
total time: 30.0028s
total number of events: 64602

Latency (ms):
min: 0.42
avg: 0.46
max: 29.57
95th percentile: 0.45
sum: 29981.28

Threads fairness:
events (avg/stddev): 64602.0000/0.00
execution time (avg/stddev): 29.9813/0.00

kirankodali@kirankodali:~$
```

5

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2174.13

General statistics:
total time: 30.0006s
total number of events: 65229

Latency (ms):
min: 0.42
avg: 0.46
max: 25.49
95th percentile: 0.44
sum: 29979.61

Threads fairness:
events (avg/stddev): 65229.0000/0.00
execution time (avg/stddev): 29.9796/0.00
```

Docker test for CPU(2GB RAM, 2 Cores)=30000

	<pre> Running 3th run of Test Case 1 sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 2032.44 General statistics: total time: 30.0008s total number of events: 60983 Latency (ms): min: 0.42 avg: 0.49 max: 87.96 95th percentile: 0.56 sum: 29976.59 Threads fairness: events (avg/stddev): 60983.0000/0.00 execution time (avg/stddev): 29.9766/0.00 </pre>	
	<pre> Running 4th run of Test Case 1 sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 2162.18 General statistics: total time: 30.0003s total number of events: 64870 Latency (ms): min: 0.42 avg: 0.46 max: 13.06 95th percentile: 0.44 sum: 29982.16 Threads fairness: events (avg/stddev): 64870.0000/0.00 execution time (avg/stddev): 29.9822/0.00 Completed 4th run of Test Case 1 </pre>	
	<pre> Running 5th run of Test Case 1 sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 2108.78 General statistics: total time: 30.0004s total number of events: 63267 Latency (ms): min: 0.42 avg: 0.47 max: 29.18 95th percentile: 0.46 sum: 29978.84 Threads fairness: events (avg/stddev): 63267.0000/0.00 execution time (avg/stddev): 29.9788/0.00 Completed 5th run of Test Case 1 </pre>	

QEMU for cpu=50000

1	<pre>sysbench 1.0.18 (using system LuajIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 1046.64 General statistics: total time: 30.0016s total number of events: 31405 Latency (ms): min: 0.85 avg: 0.95 max: 18.71 95th percentile: 1.16 sum: 29977.37 Threads fairness: events (avg/stddev): 31405.0000/0.00 execution time (avg/stddev): 29.9774/0.00 kirankodali@kirankodali:~\$</pre>	
2	<pre>sysbench 1.0.18 (using system LuajIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 1072.75 General statistics: total time: 30.0005s total number of events: 32185 Latency (ms): min: 0.85 avg: 0.93 max: 34.25 95th percentile: 0.89 sum: 29975.92 Threads fairness: events (avg/stddev): 32185.0000/0.00 execution time (avg/stddev): 29.9759/0.00 kirankodali@Kirankodali:~\$</pre>	
3	<pre>sysbench 1.0.18 (using system LuajIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 1069.68 General statistics: total time: 30.0002s total number of events: 32092 Latency (ms): min: 0.85 avg: 0.93 max: 14.02 95th percentile: 0.89 sum: 29978.32 Threads fairness: events (avg/stddev): 32092.0000/0.00 execution time (avg/stddev): 29.9783/0.00</pre>	

4

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1066.17

General statistics:
total time: 30.0007s
total number of events: 31987

Latency (ms):
min: 0.85
avg: 0.94
max: 30.68
95th percentile: 0.89
sum: 29978.04

Threads fairness:
events (avg/stddev): 31987.0000/0.00
execution time (avg/stddev): 29.9780/0.00
```

5

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1085.44

General statistics:
total time: 30.0010s
total number of events: 32565

Latency (ms):
min: 0.84
avg: 0.92
max: 27.56
95th percentile: 0.89
sum: 29980.85

Threads fairness:
events (avg/stddev): 32565.0000/0.00
execution time (avg/stddev): 29.9808/0.00
```

Docker for CPU=50000

1

```
Running 1th run of Test Case 1
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1093.11

General statistics:
total time: 30.0013s
total number of events: 32798

Latency (ms):
min: 0.84
avg: 0.91
max: 7.64
95th percentile: 0.89
sum: 29983.76

Threads fairness:
events (avg/stddev): 32798.0000/0.00
execution time (avg/stddev): 29.9838/0.00

Completed 1th run of Test Case 1
```

2

```
Running 2th run of Test Case 1
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
    events per second: 1060.45

General statistics:
    total time:          30.0009s
    total number of events: 31816

Latency (ms):
    min:                 0.85
    avg:                 0.94
    max:                 13.75
    95th percentile:     0.92
    sum:                29985.44

Threads fairness:
    events (avg/stddev): 31816.0000/0.00
    execution time (avg/stddev): 29.9854/0.00

Completed 2th run of Test Case 1
```

3

```
Running 3th run of Test Case 1
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
    events per second: 1074.10

General statistics:
    total time:          30.0010s
    total number of events: 32225

Latency (ms):
    min:                 0.85
    avg:                 0.93
    max:                 15.29
    95th percentile:     0.89
    sum:                29984.46

Threads fairness:
    events (avg/stddev): 32225.0000/0.00
    execution time (avg/stddev): 29.9845/0.00
```

4

```
Running 4th run of Test Case 1
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000
Initializing worker threads...

Threads started!

CPU speed:
  events per second: 1068.42

General statistics:
  total time:           30.0007s
  total number of events: 32055

Latency (ms):
  min:                  0.85
  avg:                  0.94
  max:                  9.38
  95th percentile:      0.90
  sum:                 29985.40

Threads fairness:
  events (avg/stddev): 32055.0000/0.00
  execution time (avg/stddev): 29.9854/0.00

Completed 4th run of Test Case 1
```

5

```
Running 5th run of Test Case 1
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000
Initializing worker threads...

Threads started!

CPU speed:
  events per second: 1100.39

General statistics:
  total time:           30.0010s
  total number of events: 33015

Latency (ms):
  min:                  0.85
  avg:                  0.91
  max:                  13.05
  95th percentile:      0.89
  sum:                 29984.57

Threads fairness:
  events (avg/stddev): 33015.0000/0.00
  execution time (avg/stddev): 29.9846/0.00
```

QEMU for 2GB RAM, 2 Cores Memory Test for 2K

1

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6293177.48 per second)
102400.00 MiB transferred (12291.36 MiB/sec)

General statistics:
    total time:          8.3294s
    total number of events: 52428800

Latency (ms):
    min:                 0.00
    avg:                 0.00
    max:                 5.30
    95th percentile:     0.00
    sum:                4418.02

Threads fairness:
    events (avg/stddev): 52428800.0000/0.00
    execution time (avg/stddev): 4.4180/0.00
```

2

```
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6234136.24 per second)
102400.00 MiB transferred (12176.05 MiB/sec)

General statistics:
    total time:          8.4065s
    total number of events: 52428800

Latency (ms):
    min:                 0.00
    avg:                 0.00
    max:                 3.36
    95th percentile:     0.00
    sum:                4473.16

Threads fairness:
    events (avg/stddev): 52428800.0000/0.00
    execution time (avg/stddev): 4.4732/0.00
```

3	<pre> Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (6200147.74 per second) 102400.00 MiB transferred (12109.66 MiB/sec) General statistics: total time: 8.4550s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 8.17 95th percentile: 0.00 sum: 4501.35 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 4.5013/0.00 </pre>	
4	<pre> sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (6141702.59 per second) 102400.00 MiB transferred (11995.51 MiB/sec) General statistics: total time: 8.5343s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 4.90 95th percentile: 0.00 sum: 4556.64 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 4.5566/0.00 </pre>	
5	<pre> sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (6196355.60 per second) 102400.00 MiB transferred (12102.26 MiB/sec) General statistics: total time: 8.4594s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 8.45 95th percentile: 0.00 sum: 4474.71 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 4.4747/0.00 kirankodali@kirankodali:~\$ </pre>	

QEMU for 2GB RAM, 2 Cores Memory Test for 4K

1	<pre>sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 4KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 26214400 (4598702.47 per second) 102400.00 MiB transferred (17963.68 MiB/sec) General statistics: total time: 5.6991s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 1.89 95th percentile: 0.00 sum: 3742.66 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 3.7427/0.00</pre>	
2	<pre>sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 4KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 26214400 (4464628.38 per second) 102400.00 MiB transferred (17439.95 MiB/sec) General statistics: total time: 5.8688s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 2.09 95th percentile: 0.00 sum: 3854.80 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 3.8548/0.00</pre>	

3

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
  block size: 4KiB
  total size: 102400MiB
  operation: write
  scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4620450.63 per second)
102400.00 MiB transferred (18048.64 MiB/sec)

General statistics:
  total time:           5.6730s
  total number of events: 26214400

Latency (ms):
  min:                 0.00
  avg:                 0.00
  max:                 1.98
  95th percentile:     0.00
  sum:                3722.05

Threads fairness:
  events (avg/stddev): 26214400.0000/0.00
  execution time (avg/stddev): 3.7220/0.00
```

4

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
  block size: 4KiB
  total size: 102400MiB
  operation: write
  scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4633004.11 per second)
102400.00 MiB transferred (18097.67 MiB/sec)

General statistics:
  total time:           5.6564s
  total number of events: 26214400

Latency (ms):
  min:                 0.00
  avg:                 0.00
  max:                 8.66
  95th percentile:     0.00
  sum:                3710.91

Threads fairness:
  events (avg/stddev): 26214400.0000/0.00
  execution time (avg/stddev): 3.7109/0.00
```

5

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
  block size: 4KiB
  total size: 102400MiB
  operation: write
  scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4559292.79 per second)
102400.00 MiB transferred (17809.74 MiB/sec)

General statistics:
  total time:           5.7473s
  total number of events: 26214400

Latency (ms):
  min:                 0.00
  avg:                 0.00
  max:                 1.99
  95th percentile:     0.00
  sum:                3764.71

Threads fairness:
  events (avg/stddev): 26214400.0000/0.00
  execution time (avg/stddev): 3.7647/0.00
```

Docker (2GB, 2Cores)

Memory test for 2K

1	<pre>Running sysbench with Mode: memory, Parameter: --memory-block-size=2K, Value: Run: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (6241863.76 per second) 102400.00 MiB transferred (12191.12 MiB/sec) General statistics: total time: 8.3987s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 2.12 95th percentile: 0.00 sum: 4538.56 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 4.5335/0.00</pre>	
2	<pre>Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (6020897.54 per second) 102400.00 MiB transferred (11759.57 MiB/sec) General statistics: total time: 8.7061s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 4.98 95th percentile: 0.00 sum: 4695.79 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 4.6958/0.00</pre>	
3	<pre>Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (6033358.72 per second) 102400.00 MiB transferred (11783.90 MiB/sec) General statistics: total time: 8.6887s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 11.85 95th percentile: 0.00 sum: 4706.06 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 4.7061/0.00</pre>	

4

```
Run 4:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (6234885.48 per second)  
102400.00 MiB transferred (12177.51 MiB/sec)  
  
General statistics:  
    total time: 8.4079s  
    total number of events: 52428800  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 1.50  
    95th percentile: 0.00  
    sum: 4527.82  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 4.5278/0.00
```

5

```
Run 5:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (6163464.08 per second)  
102400.00 MiB transferred (12038.02 MiB/sec)  
  
General statistics:  
    total time: 8.5054s  
    total number of events: 52428800  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 2.75  
    95th percentile: 0.00  
    sum: 4594.95  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 4.5958/0.00
```

Docker (2GB, 2Cores)

Memory test for 4K

1

```
Running sysbench with Mode: memory, Parameter: --memory-block-size=2K, Value:  
Run 1:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (6241853.76 per second)  
102400.00 MiB transferred (12191.12 MiB/sec)  
  
General statistics:  
    total time: 8.3987s  
    total number of events: 52428800  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 2.12  
    95th percentile: 0.00  
    sum: 4533.50  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 4.5335/0.00
```

2

```
Run 2:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (4443461.13 per second)  
102400.00 MiB transferred (17357.27 MiB/sec)  
  
General statistics:  
    total time: 5.8981s  
    total number of events: 26214400  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 1.70  
    95th percentile: 0.00  
    sum: 3907.13  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 3.9071/0.00
```

3

```
Run 3:  
Results:  
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (4538883.93 per second)  
102400.00 MiB transferred (17730.02 MiB/sec)  
  
General statistics:  
    total time:          5.7746s  
    total number of events: 26214400  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                 3.06  
    95th percentile:     0.00  
    sum:                3811.45  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 3.8114/0.00
```

4

```
Run 4:  
Results:  
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (4472926.72 per second)  
102400.00 MiB transferred (17472.37 MiB/sec)  
  
General statistics:  
    total time:          5.8684s  
    total number of events: 26214400  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                 1.78  
    95th percentile:     0.00  
    sum:                3882.97  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 3.8830/0.00
```

5

```
Run 5:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (4550544.86 per second)  
102400.00 MiB transferred (17775.57 MiB/sec)  
  
General statistics:  
    total time: 5.7587s  
    total number of events: 26214400  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 1.42  
    95th percentile: 0.00  
    sum: 3805.25  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 3.8053/0.00
```

QEMU (2GB, 2 Cores)

FileIO

```
sysbench fileio --file-test-mode=rndrw --file-total-size=1G
```

1

```
File operations:  
    reads/s: 2396.46  
    writes/s: 1597.64  
    fsyncs/s: 5121.84  
  
Throughput:  
    read, MiB/s: 37.44  
    written, MiB/s: 24.96  
  
General statistics:  
    total time: 10.0131s  
    total number of events: 91166  
  
Latency (ms):  
    min: 0.00  
    avg: 0.11  
    max: 29.20  
    95th percentile: 0.33  
    sum: 9946.60  
  
Threads fairness:  
    events (avg/stddev): 91166.0000/0.00
```

2

```
Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 8MiB each
1GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
(Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
  reads/s:          2180.20
  writes/s:         1453.46
  fsyncs/s:        4654.98

Throughput:
  read, MiB/s:      34.07
  written, MiB/s:   22.71

General statistics:
  total time:       10.0165s
  total number of events: 82903

Latency (ms):
  min:              0.00
  avg:              0.12
  max:             30.59
  95th percentile:  0.37
  sum:            9939.61

Threads fairness:
  events (avg/stddev): 82903.0000/0.00
  execution time (avg/stddev): 9.9396/0.00
```

3

```
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 8MiB each
1GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
(Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
  reads/s:          2456.08
  writes/s:         1637.39
  fsyncs/s:        5248.53

Throughput:
  read, MiB/s:      38.38
  written, MiB/s:   25.58

General statistics:
  total time:       10.0143s
  total number of events: 93441

Latency (ms):
  min:              0.00
  avg:              0.11
  max:             26.07
  95th percentile:  0.34
  sum:            9936.05

Threads fairness:
  events (avg/stddev): 93441.0000/0.00
  execution time (avg/stddev): 9.9361/0.00
```

4	<pre> sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Extra file open flags: (none) 128 files, 8MiB each 1GiB total file size Block size 16KiB Number of IO requests: 0 Read/Write ratio for combined random IO test: 1.50 Periodic FSYNC enabled, calling fsync() each 100 requests. Calling fsync() at the end of test, Enabled. Using synchronous I/O mode Doing random r/w test Initializing worker threads... Threads started! File operations: reads/s: 2629.18 writes/s: 1752.79 fsyncs/s: 5612.81 Throughput: read, MiB/s: 41.08 written, MiB/s: 27.39 General statistics: total time: 10.0173s total number of events: 100003 Latency (ms): min: 0.00 avg: 0.10 max: 30.63 95th percentile: 0.33 sum: 9939.05 Threads fairness: events (avg/stddev): 100003.0000/0.00 execution time (avg/stddev): 9.9391/0.00 </pre>
5	<pre> sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Extra file open flags: (none) 128 files, 8MiB each 1GiB total file size Block size 16KiB Number of IO requests: 0 Read/Write ratio for combined random IO test: 1.50 Periodic FSYNC enabled, calling fsync() each 100 requests. Calling fsync() at the end of test, Enabled. Using synchronous I/O mode Doing random r/w test Initializing worker threads... Threads started! File operations: reads/s: 2490.46 writes/s: 1660.31 fsyncs/s: 5314.19 Throughput: read, MiB/s: 38.91 written, MiB/s: 25.94 General statistics: total time: 10.0206s total number of events: 94732 Latency (ms): min: 0.00 avg: 0.10 max: 15.43 95th percentile: 0.34 sum: 9936.71 Threads fairness: events (avg/stddev): 94732.0000/0.00 execution time (avg/stddev): 9.9367/0.00 </pre>

QEMU (raw, cpu=2 cores, ram=2gb)

1. Cpu test with max-prime 30000

```
1 Initializing worker threads...
Threads started!

CPU speed:
events per second: 1632.71

General statistics:
total time: 30.0015s
total number of events: 48986

Latency (ms):
min: 0.42
avg: 0.61
max: 15.85
95th percentile: 2.11
sum: 29992.91

Threads fairness:
events (avg/stddev): 48986.0000/0.00
execution time (avg/stddev): 29.9929/0.00

2 Threads started!

CPU speed:
events per second: 1553.93

General statistics:
total time: 30.0010s
total number of events: 46621

Latency (ms):
min: 0.42
avg: 0.64
max: 15.94
95th percentile: 2.14
sum: 29987.97

Threads fairness:
events (avg/stddev): 46621.0000/0.00
execution time (avg/stddev): 29.9880/0.00
```

```
3 | Threads started!

CPU speed:
  events per second: 1553.93

General statistics:
  total time:          30.0010s
  total number of events: 46621

Latency (ms):
  min:                0.42
  avg:                0.64
  max:                15.94
  95th percentile:    2.14
  sum:               29987.97

Threads fairness:
  events (avg/stddev): 46621.0000/0.00
  execution time (avg/stddev): 29.9880/0.00
-----
4 | Initializing worker threads...

Threads started!

CPU speed:
  events per second: 1397.51

General statistics:
  total time:          30.0003s
  total number of events: 41928

Latency (ms):
  min:                0.42
  avg:                0.71
  max:                29.94
  95th percentile:    2.30
  sum:               29976.64

Threads fairness:
  events (avg/stddev): 41928.0000/0.00
  execution time (avg/stddev): 29.9766/0.00
```

```
5 | Threads started!

5 | Total operations: 52428800 (4487532.84 per second)

5 | 102400.00 MiB transferred (8764.71 MiB/sec)

5 |
5 | General statistics:
5 |   total time:           11.6827s
5 |   total number of events: 52428800

5 | Latency (ms):
5 |   min:                 0.00
5 |   avg:                 0.00
5 |   max:                 16.67
5 |   95th percentile:     0.00
5 |   sum:                 6488.47

5 | Threads fairness:
5 |   events (avg/stddev): 52428800.0000/0.00
5 |   execution time (avg/stddev): 6.4885/0.00
5 |
5 | -----
5 | Run 3:
```

2. Cpu test with max-prime 50000

```
1 | CPU speed:
1 |   events per second: 801.05

1 |
1 | General statistics:
1 |   total time:           30.0005s
1 |   total number of events: 24033

1 | Latency (ms):
1 |   min:                 0.85
1 |   avg:                 1.25
1 |   max:                 17.15
1 |   95th percentile:     4.25
1 |   sum:                 29992.90

1 |
1 | Threads fairness:
1 |   events (avg/stddev): 24033.0000/0.00
1 |   execution time (avg/stddev): 29.9929/0.00
1 |
1 | -----
1 | Run 2:
```

```
2 | Initializing worker threads...
| 
| Threads started!
| 
| CPU speed:
|   events per second: 758.79
| 
| General statistics:
|   total time: 30.0044s
|   total number of events: 22768
| 
| Latency (ms):
|   min: 0.82
|   avg: 1.32
|   max: 25.98
|   95th percentile: 4.41
|   sum: 29991.90
| 
| Threads fairness:
|   events (avg/stddev): 22768.0000/0.00
|   execution time (avg/stddev): 29.9919/0.00
| -----
| Run 3:
| 
3 | Threads started!
| 
| Total operations: 52428800 (4617693.82 per second)
| 
| 102400.00 MiB transferred (9018.93 MiB/sec)
| 
| General statistics:
|   total time: 11.3492s
|   total number of events: 52428800
| 
| Latency (ms):
|   min: 0.00
|   avg: 0.00
|   max: 11.76
|   95th percentile: 0.00
|   sum: 6220.22
| 
| Threads fairness:
|   events (avg/stddev): 52428800.0000/0.00
|   execution time (avg/stddev): 6.2202/0.00
| -----
| Run 4:
```

4

```
Threads started!

Total operations: 52428800 (4617693.82 per second)

102400.00 MiB transferred (9018.93 MiB/sec)

General statistics:
    total time:                      11.3492s
    total number of events:          52428800

Latency (ms):
    min:                            0.00
    avg:                            0.00
    max:                            11.76
    95th percentile:                0.00
    sum:                           6220.22

Threads fairness:
    events (avg/stddev):        52428800.0000/0.00
    execution time (avg/stddev): 6.2202/0.00
```

5

```
Threads started!

CPU speed:
    events per second:      707.14

General statistics:
    total time:                      30.0010s
    total number of events:          21216

Latency (ms):
    min:                            0.84
    avg:                            1.41
    max:                            19.08
    95th percentile:                4.57
    sum:                           29989.81

Threads fairness:
    events (avg/stddev):        21216.0000/0.00
    execution time (avg/stddev): 29.9898/0.00
-----
```

Memory-1

1	<pre>~/cloud computing/HW/Docker - root Threads started! Total operations: 52428800 (4619848.93 per second) 102400.00 MiB transferred (9823.14 MiB/sec) General statistics: total time: 11.9672s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 1.00 95th percentile: 0.00 sum: 6386.94 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 6.3869/0.00</pre>		
2	<pre>~/cloud computing/HW1/Docker - root@ccac352944e7: / - zsh ... ~/cloud computing/HW1/QEMU-raw - qemu-system-aarch64 + start-script-raw.sh +</pre>		

3

```
Threads started!

Total operations: 52428800 (4487532.84 per second)

102400.00 MiB transferred (8764.71 MiB/sec)

General statistics:
    total time:                      11.6827s
    total number of events:          52428800

Latency (ms):
    min:                            0.00
    avg:                           0.00
    max:                           16.67
    95th percentile:                0.00
    sum:                          6488.47

Threads fairness:
    events (avg/stddev):        52428800.0000/0.00
    execution time (avg/stddev): 6.4885/0.00
-----
```

Run 3:

4

```
Threads started!

Total operations: 52428800 (4617693.82 per second)

102400.00 MiB transferred (9018.93 MiB/sec)

General statistics:
    total time:                      11.3492s
    total number of events:          52428800

Latency (ms):
    min:                            0.00
    avg:                           0.00
    max:                           11.76
    95th percentile:                0.00
    sum:                          6220.22

Threads fairness:
    events (avg/stddev):        52428800.0000/0.00
    execution time (avg/stddev): 6.2202/0.00
-----
```

Run 4:

5 | Threads started!

```
Total operations: 26214400 (3606260.34 per second)
102400.00 MiB transferred (14086.95 MiB/sec)

General statistics:
  total time:                7.2675s
  total number of events:    26214400

Latency (ms):
  min:                      0.00
  avg:                      0.00
  max:                      9.37
  95th percentile:          0.00
  sum:                      4846.08

Threads fairness:
  events (avg/stddev):     26214400.0000/0.00
  execution time (avg/stddev): 4.8461/0.00
-----
```

Memory -2

	1	~\$/cloud computing/HW1/DOCKER
		<pre>Threads started! Total operations: 26214400 (3618620.74 per second) 102400.00 MiB transferred (14135.24 MiB/sec) General statistics: total time: 7.2437s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 9.34 95th percentile: 0.00 sum: 4904.27 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 4.9043/0.00 -----</pre>
	2	<pre>Run 2: Threads started! Total operations: 26214400 (3618620.74 per second) 102400.00 MiB transferred (14135.24 MiB/sec) General statistics: total time: 7.2437s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 9.34 95th percentile: 0.00 sum: 4904.27 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 4.9043/0.00 -----</pre>
	3	<pre>Run 3:</pre>

3

```
Threads started!

Total operations: 26214400 (3731655.59 per second)

102400.00 MiB transferred (14576.78 MiB/sec)

General statistics:
    total time:                      7.0235s
    total number of events:          26214400

Latency (ms):
    min:                            0.00
    avg:                            0.00
    max:                            8.55
    95th percentile:                0.00
    sum:                           4713.45

Threads fairness:
    events (avg/stddev):          26214400.0000/0.00
    execution time (avg/stddev):  4.7135/0.00
```

Run 4:

4

```
Threads started!

Total operations: 26214400 (3768685.18 per second)

102400.00 MiB transferred (14721.43 MiB/sec)

General statistics:
    total time:                      6.9541s
    total number of events:          26214400

Latency (ms):
    min:                            0.00
    avg:                            0.00
    max:                            8.43
    95th percentile:                0.00
    sum:                           4660.67

Threads fairness:
    events (avg/stddev):          26214400.0000/0.00
    execution time (avg/stddev):  4.6607/0.00
```

Run 5:

5

```
Threads started!

Total operations: 26214400 (3731655.59 per second)

102400.00 MiB transferred (14576.78 MiB/sec)

General statistics:
    total time:                      7.0235s
    total number of events:          26214400

Latency (ms):
    min:                            0.00
    avg:                            0.00
    max:                            8.55
    95th percentile:                0.00
    sum:                           4713.45

Threads fairness:
    events (avg/stddev):          26214400.0000/0.00
    execution time (avg/stddev):  4.7135/0.00
-----
Run 4:
```

FileIO -1

```
1      writes/s:                  65.83
      fsyncs/s:                  212.06

      Throughput:
        read, MiB/s:             1.54
        written, MiB/s:           1.03

      General statistics:
        total time:              30.3814s
        total number of events:  11315

      Latency (ms):
        min:                      0.00
        avg:                      2.65
        max:                      43.17
        95th percentile:          9.91
        sum:                     29974.89

      Threads fairness:
        events (avg/stddev):   11315.0000/0.00
        execution time (avg/stddev): 29.9749/0.00
```

2	<pre>writes/s: 67.24 fsyncs/s: 217.77 Throughput: read, MiB/s: 1.58 written, MiB/s: 1.05 General statistics: total time: 30.3386s total number of events: 11579 Latency (ms): min: 0.00 avg: 2.59 max: 129.40 95th percentile: 9.73 sum: 29988.83 Threads fairness: events (avg/stddev): 11579.0000/0.00 execution time (avg/stddev): 29.9888/0.00 -----</pre>
3	<pre>writes/s: 69.92 fsyncs/s: 224.23 Throughput: read, MiB/s: 1.64 written, MiB/s: 1.09 General statistics: total time: 30.3204s total number of events: 11971 Latency (ms): min: 0.00 avg: 2.50 max: 29.53 95th percentile: 9.73 sum: 29975.91 Threads fairness: events (avg/stddev): 11971.0000/0.00 execution time (avg/stddev): 29.9759/0.00 -----</pre>
	<pre>Run 4:</pre>

```

4      writes/s:           71.59
          fsyncs/s:        230.96

          Throughput:
            read, MiB/s:     1.68
            written, MiB/s:  1.12

          General statistics:
            total time:       30.1687s
            total number of events: 12240

          Latency (ms):
            min:              0.00
            avg:              2.45
            max:              31.67
            95th percentile:   9.73
            sum:              29985.10

          Threads fairness:
            events (avg/stddev): 12240.0000/0.00
            execution time (avg/stddev): 29.9851/0.00
-----  

Run 5:  

5      ~/cloud computing/HW1/Docker -- root@ccac352944e7:/ -- zsh ... ~/cloud computing/HW1/QEMU-raw -- qemu-system-aarch64 -start-script=raw  

Throughput:
  read, MiB/s:           0.00
  written, MiB/s:        6.47

General statistics:
  total time:           38.1991s
  total number of events: 28391

Latency (ms):
  min:                  0.00
  avg:                 1.06
  max:                 4.36
  95th percentile:      7.04
  sum:                 29977.34

Threads fairness:
  events (avg/stddev): 28391.0000/0.00
  execution time (avg/stddev): 29.9773/0.00
-----  

sysbench 1.0.10 (using system LuaJIT 2.1.0-beta3)

Removing test files...
kirankodali@kirankodali:~$ 

```

FileIO -2

1	<pre>writes/s: 384.40 fsyncs/s: 494.22 Throughput: read, MiB/s: 0.00 written, MiB/s: 6.01 General statistics: total time: 30.1759s total number of events: 26386 Latency (ms): min: 0.00 avg: 1.14 max: 43.94 95th percentile: 7.43 sum: 29976.98 Threads fairness: events (avg/stddev): 26386.0000/0.00 execution time (avg/stddev): 29.9770/0.00 -----</pre>
2	<pre>writes/s: 456.48 fsyncs/s: 587.81 Throughput: read, MiB/s: 0.00 written, MiB/s: 7.13 General statistics: total time: 30.2298s total number of events: 31442 Latency (ms): min: 0.00 avg: 0.95 max: 46.10 95th percentile: 6.55 sum: 29951.75 Threads fairness: events (avg/stddev): 31442.0000/0.00 execution time (avg/stddev): 29.9518/0.00 -----</pre>

3	writes/s: 379.81 fsyncs/s: 489.62 Throughput: read, MiB/s: 0.00 written, MiB/s: 5.93 General statistics: total time: 30.2774s total number of events: 26197 Latency (ms): min: 0.00 avg: 1.14 max: 44.43 95th percentile: 7.30 sum: 29959.18 Threads fairness: events (avg/stddev): 26197.0000/0.00 execution time (avg/stddev): 29.9592/0.00
4	Run 4. writes/s: 384.44 fsyncs/s: 493.48 Throughput: read, MiB/s: 0.00 written, MiB/s: 6.01 General statistics: total time: 30.1731s total number of events: 26362 Latency (ms): min: 0.00 avg: 1.14 max: 41.28 95th percentile: 7.04 sum: 29976.02 Threads fairness: events (avg/stddev): 26362.0000/0.00 execution time (avg/stddev): 29.9760/0.00

5

```
-/cloud computing/HW1/Docker - root@ccac352944e7: / -- zsh ... -/cloud computing/HW1/QEMU-U-raw - qemu-system-aarch64 + start-script-raw.sh
```

```
Throughput:
  read, MiB/s:          0.00
  written, MiB/s:       0.47

Demos statistics:
  total time:           38.1991s
  total number of events: 28951

Latency (ms):
  min:                  0.00
  avg:                  1.86
  max:                  47.84
  99th percentile:      7.84
  sum:                  29777.34

Threads fairness:
  execution time (fdvds):
    execution time (avg/stddev): 28951.0000/0.00
  sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running test 'file...
irankodali@irankodali:~$
```

QEMU (QCOW2, CPU=2, RAM=3gb)

CPU test -1

Run 1:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2301.05

General statistics:

total time:	30.0019s
total number of events:	69039

Latency (ms):

min:	0.41
avg:	0.43
max:	20.20
95th percentile:	0.46
sum:	29942.28

Threads fairness:

events (avg/stddev): 69039.0000/0.00

execution time (avg/stddev): 29.9423/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2343.38

General statistics:

total time:	30.0006s
-------------	----------

total number of events: 70306

Latency (ms):

min:	0.41
avg:	0.43
max:	46.75
95th percentile:	0.44
sum:	29963.75

Threads fairness:

events (avg/stddev):	70306.0000/0.00
execution time (avg/stddev):	29.9637/0.00

Run 3:

Command: sysbench cpu --cpu-max-prime=30000 run
Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second:	2342.76
--------------------	---------

General statistics:

total time:	30.0008s
total number of events:	70288

Latency (ms):

min:	0.41
avg:	0.43
max:	31.56
95th percentile:	0.45
sum:	29970.55

Threads fairness:

events (avg/stddev):	70288.0000/0.00
execution time (avg/stddev):	29.9706/0.00

Run 4:

Command: sysbench cpu --cpu-max-prime=30000 run
Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2301.08

General statistics:
total time: 30.0010s
total number of events: 69038

Latency (ms):
min: 0.41
avg: 0.43
max: 48.61
95th percentile: 0.45
sum: 29942.34

Threads fairness:
events (avg/stddev): 69038.0000/0.00
execution time (avg/stddev): 29.9423/0.00

Run 5:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2319.27

General statistics:
total time: 30.0012s
total number of events: 69584

Latency (ms):
min: 0.40
avg: 0.43
max: 38.94
95th percentile: 0.46
sum: 29970.71

Threads fairness:
events (avg/stddev): 69584.0000/0.00
execution time (avg/stddev): 29.9707/0.00

CPU test -2

Run 1:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1156.85

General statistics:
total time: 30.0013s
total number of events: 34709

Latency (ms):
min: 0.81
avg: 0.86
max: 40.87
95th percentile: 0.90
sum: 29946.64

Threads fairness:
events (avg/stddev): 34709.0000/0.00
execution time (avg/stddev): 29.9466/0.00

Run 2:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1152.80

General statistics:
total time: 30.0011s
total number of events: 34587

Latency (ms):
min: 0.82

avg: 0.87
max: 52.39
95th percentile: 0.90
sum: 29941.81

Threads fairness:
events (avg/stddev): 34587.0000/0.00
execution time (avg/stddev): 29.9418/0.00

Run 3:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1176.76

General statistics:
total time: 30.0015s
total number of events: 35307

Latency (ms):
min: 0.82
avg: 0.85
max: 25.93
95th percentile: 0.87
sum: 29970.87

Threads fairness:
events (avg/stddev): 35307.0000/0.00
execution time (avg/stddev): 29.9709/0.00

Run 4:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1182.85

General statistics:

total time: 30.0007s
total number of events: 35487

Latency (ms):

min:	0.82
avg:	0.84
max:	6.45
95th percentile:	0.87
sum:	29965.63

Threads fairness:

events (avg/stddev): 35487.0000/0.00
execution time (avg/stddev): 29.9656/0.00

Run 5:

Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1190.70

General statistics:

total time: 30.0002s
total number of events: 35722

Latency (ms):

min:	0.82
avg:	0.84
max:	5.60
95th percentile:	0.86
sum:	29983.41

Threads fairness:

events (avg/stddev): 35722.0000/0.00
execution time (avg/stddev): 29.9834/0.00

Memory test -1

Run 1:

Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6776102.88 per second)

102400.00 MiB transferred (13234.58 MiB/sec)

General statistics:
total time: 7.7366s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 1.71
95th percentile: 0.00
sum: 4074.40

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0744/0.00

Run 2:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6765906.16 per second)

102400.00 MiB transferred (13214.66 MiB/sec)

General statistics:
total time: 7.7481s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.38
95th percentile: 0.00
sum: 4081.31

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0813/0.00

Run 3:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6816886.01 per second)

102400.00 MiB transferred (13314.23 MiB/sec)

General statistics:
total time: 7.6904s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.35
95th percentile: 0.00
sum: 4052.12

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0521/0.00

Run 4:
Command: sysbench memory --memory-block-size=2K run
Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6824082.76 per second)

102400.00 MiB transferred (13328.29 MiB/sec)

General statistics:

total time: 7.6823s

total number of events: 52428800

Latency (ms):

min: 0.00

avg: 0.00

max: 0.73

95th percentile: 0.00

sum: 4048.09

Threads fairness:

events (avg/stddev): 52428800.0000/0.00

execution time (avg/stddev): 4.0481/0.00

Run 5:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6827231.89 per second)

102400.00 MiB transferred (13334.44 MiB/sec)

General statistics:

total time:	7.6787s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	0.07
95th percentile:	0.00
sum:	4044.88

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	4.0449/0.00

Memory test -2

Run 1:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size:	4KiB
total size:	102400MiB
operation:	write
scope:	global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5033920.69 per second)

102400.00 MiB transferred (19663.75 MiB/sec)

General statistics:

total time:	5.2069s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.04
95th percentile:	0.00
sum:	3392.72

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.3927/0.00

Run 2:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4917908.79 per second)

102400.00 MiB transferred (19210.58 MiB/sec)

General statistics:
total time: 5.3293s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 2.08
95th percentile: 0.00
sum: 3466.30

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.4663/0.00

Run 3:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4784181.88 per second)

102400.00 MiB transferred (18688.21 MiB/sec)

General statistics:

total time:	5.4781s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	1.97
95th percentile:	0.00
sum:	3556.98

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.5570/0.00

Run 4:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size:	4KiB
total size:	102400MiB
operation:	write
scope:	global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4856156.34 per second)

102400.00 MiB transferred (18969.36 MiB/sec)

General statistics:

total time:	5.3973s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.69
95th percentile:	0.00
sum:	3509.37

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.5094/0.00

Run 5:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4971997.81 per second)

102400.00 MiB transferred (19421.87 MiB/sec)

General statistics:
total time: 5.2717s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 0.23
95th percentile: 0.00
sum: 3432.16

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.4322/0.00

FileIO test -1

Run 1:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 4539.73
writes/s: 3026.49
fsyncs/s: 9687.31

Throughput:
read, MiB/s: 70.93
written, MiB/s: 47.29

General statistics:
total time: 30.0063s
total number of events: 517600

Latency (ms):
min: 0.00
avg: 0.06
max: 34.54
95th percentile: 0.17
sum: 29807.47

Threads fairness:
events (avg/stddev): 517600.0000/0.00
execution time (avg/stddev): 29.8075/0.00

Run 2:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4346.60
writes/s:	2897.73
fsyncs/s:	9273.35

Throughput:

read, MiB/s:	67.92
written, MiB/s:	45.28

General statistics:

total time:	30.0089s
total number of events:	495562

Latency (ms):

min:	0.00
avg:	0.06
max:	34.15
95th percentile:	0.17
sum:	29820.21

Threads fairness:

events (avg/stddev):	495562.0000/0.00
execution time (avg/stddev):	29.8202/0.00

Run 3:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Initializing worker threads...

Threads started!

File operations:

reads/s:	4701.43
writes/s:	3134.29
fsyncs/s:	10032.07

Throughput:

read, MiB/s:	73.46
written, MiB/s:	48.97

General statistics:
total time: 30.0085s
total number of events: 536073

Latency (ms):
min: 0.00
avg: 0.06
max: 54.31
95th percentile: 0.16
sum: 29824.12

Threads fairness:
events (avg/stddev): 536073.0000/0.00
execution time (avg/stddev): 29.8241/0.00

Run 4:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 4575.76
writes/s: 3050.49
fsyncs/s: 9763.39

Throughput:
read, MiB/s: 71.50
written, MiB/s: 47.66

General statistics:
total time: 30.0084s
total number of events: 521722

Latency (ms):
min: 0.00
avg: 0.06
max: 35.63
95th percentile: 0.16
sum: 29824.63

Threads fairness:
events (avg/stddev): 521722.0000/0.00

execution time (avg/stddev): 29.8246/0.00

Run 5:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Initializing worker threads...

Threads started!

File operations:

reads/s: 4615.18

writes/s: 3076.79

fsyncs/s: 9848.32

Throughput:

read, MiB/s: 72.11

written, MiB/s: 48.07

General statistics:

total time: 30.0045s

total number of events: 526174

Latency (ms):

min: 0.00

avg: 0.06

max: 33.93

95th percentile: 0.17

sum: 29820.63

Threads fairness:

events (avg/stddev): 526174.0000/0.00

execution time (avg/stddev): 29.8206/0.00

FileIO test -2

Run 1:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	12026.53
fsyncs/s:	15395.89

Throughput:

read, MiB/s:	0.00
written, MiB/s:	187.91

General statistics:

total time:	30.0080s
total number of events:	822782

Latency (ms):

min:	0.00
avg:	0.04
max:	15.59
95th percentile:	0.05
sum:	29786.77

Threads fairness:

events (avg/stddev):	822782.0000/0.00
execution time (avg/stddev):	29.7868/0.00

Run 2:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11687.24
fsyncs/s:	14963.03

Throughput:

read, MiB/s:	0.00
written, MiB/s:	182.61

General statistics:

total time:	30.0064s
total number of events:	799569

Latency (ms):

min:	0.00
avg:	0.04
max:	33.32
95th percentile:	0.05
sum:	29789.56

Threads fairness:

events (avg/stddev):	799569.0000/0.00
execution time (avg/stddev):	29.7896/0.00

Run 3:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	12050.31
fsyncs/s:	15428.00

Throughput:

read, MiB/s:	0.00
written, MiB/s:	188.29

General statistics:

total time:	30.0068s
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total number of events: 824428

Latency (ms):

min:	0.00
avg:	0.04
max:	34.77
95th percentile:	0.05
sum:	29766.81

Threads fairness:

events (avg/stddev):	824428.0000/0.00
execution time (avg/stddev):	29.7668/0.00

Run 4:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11340.25
fsyncs/s:	14517.25

Throughput:

read, MiB/s:	0.00
written, MiB/s:	177.19

General statistics:

total time:	30.0074s
total number of events:	775808

Latency (ms):

min:	0.00
avg:	0.04
max:	26.19
95th percentile:	0.06
sum:	29758.64

Threads fairness:

events (avg/stddev):	775808.0000/0.00
execution time (avg/stddev):	29.7586/0.00

Run 5:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	12417.00
fsyncs/s:	15897.59

Throughput:

read, MiB/s:	0.00
written, MiB/s:	194.02

General statistics:

total time:	30.0066s
total number of events:	849515

Latency (ms):

min:	0.00
avg:	0.04
max:	34.42
95th percentile:	0.05
sum:	29774.93

Threads fairness:

events (avg/stddev):	849515.0000/0.00
execution time (avg/stddev):	29.7749/0.00

QEMU (RAW, cpu=2, RAM=3gb)

CPU-1

Run 1:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2438.07

General statistics:

total time: 30.0005s

total number of events: 73145

Latency (ms):

min:	0.39
avg:	0.41
max:	48.35
95th percentile:	0.43
sum:	29958.06

Threads fairness:

events (avg/stddev): 73145.0000/0.00

execution time (avg/stddev): 29.9581/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2445.14

General statistics:

total time:	30.0004s
total number of events:	73357

Latency (ms):

min:	0.39
avg:	0.41
max:	39.24
95th percentile:	0.42
sum:	29943.59

Threads fairness:

events (avg/stddev):	73357.0000/0.00
execution time (avg/stddev):	29.9436/0.00

Run 3:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second:	2467.40
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General statistics:

total time:	30.0001s
total number of events:	74024

Latency (ms):

min:	0.39
avg:	0.40
max:	27.37
95th percentile:	0.42
sum:	29948.09

Threads fairness:

events (avg/stddev):	74024.0000/0.00
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execution time (avg/stddev): 29.9481/0.00

Run 4:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2461.90

General statistics:

total time:	30.0005s
total number of events:	73860

Latency (ms):

min:	0.39
avg:	0.41
max:	28.80
95th percentile:	0.42
sum:	29944.62

Threads fairness:

events (avg/stddev): 73860.0000/0.00

execution time (avg/stddev): 29.9446/0.00

Run 5:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2468.58

General statistics:

total time:	30.0004s
total number of events:	74060

Latency (ms):

min:	0.39
avg:	0.40
max:	5.48
95th percentile:	0.42
sum:	29939.67

Threads fairness:

events (avg/stddev):	74060.0000/0.00
execution time (avg/stddev):	29.9397/0.00

CPU-2

Run 1:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1218.63

General statistics:

total time:	30.0002s
total number of events:	36560

Latency (ms):

min:	0.78
avg:	0.82
max:	29.95
95th percentile:	0.86
sum:	29963.05

Threads fairness:

events (avg/stddev):	36560.0000/0.00
execution time (avg/stddev):	29.9631/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second:	1202.13
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General statistics:

total time:	30.0003s
total number of events:	36065

Latency (ms):

min:	0.77
avg:	0.83
max:	17.64
95th percentile:	0.87
sum:	29967.09

Threads fairness:

events (avg/stddev):	36065.0000/0.00
execution time (avg/stddev):	29.9671/0.00

Run 3:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1218.40

General statistics:
total time: 30.0010s
total number of events: 36554

Latency (ms):
min: 0.78
avg: 0.82
max: 25.47
95th percentile: 0.86
sum: 29968.46

Threads fairness:
events (avg/stddev): 36554.0000/0.00
execution time (avg/stddev): 29.9685/0.00

Run 4:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1229.51

General statistics:
total time: 30.0009s
total number of events: 36887

Latency (ms):
min: 0.79
avg: 0.81
max: 8.55
95th percentile: 0.84
sum: 29969.67

Threads fairness:
events (avg/stddev): 36887.0000/0.00
execution time (avg/stddev): 29.9697/0.00

Run 5:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1225.17

General statistics:
total time: 30.0002s
total number of events: 36756

Latency (ms):
min: 0.79
avg: 0.82
max: 7.55
95th percentile: 0.84
sum: 29970.30

Threads fairness:
events (avg/stddev): 36756.0000/0.00
execution time (avg/stddev): 29.9703/0.00

Memory-1

Run 1:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (7054542.36 per second)

102400.00 MiB transferred (13778.40 MiB/sec)

General statistics:
total time: 7.4313s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.20
95th percentile: 0.00
sum: 3917.03

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 3.9170/0.00

Run 2:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (7057852.91 per second)

102400.00 MiB transferred (13784.87 MiB/sec)

General statistics:

total time: 7.4279s

total number of events: 52428800

Latency (ms):

min: 0.00

avg: 0.00

max: 0.07

95th percentile: 0.00

sum: 3917.41

Threads fairness:

events (avg/stddev): 52428800.0000/0.00

execution time (avg/stddev): 3.9174/0.00

Run 3:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (7008745.73 per second)

102400.00 MiB transferred (13688.96 MiB/sec)

General statistics:

total time: 7.4799s
total number of events: 52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	2.23
95th percentile:	0.00
sum:	3939.74

Threads fairness:

events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 3.9397/0.00

Run 4:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (7049759.34 per second)

102400.00 MiB transferred (13769.06 MiB/sec)

General statistics:

total time:	7.4363s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	0.37
95th percentile:	0.00
sum:	3920.34

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	3.9203/0.00

Run 5:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size:	2KiB
total size:	102400MiB
operation:	write
scope:	global

Initializing worker threads...

Threads started!

Total operations: 52428800 (7056238.22 per second)

102400.00 MiB transferred (13781.72 MiB/sec)

General statistics:

total time:	7.4295s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	0.06
95th percentile:	0.00
sum:	3916.77

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	3.9168/0.00

Memory-2

Run 1:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5168538.29 per second)

102400.00 MiB transferred (20189.60 MiB/sec)

General statistics:

total time:	5.0713s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.07
95th percentile:	0.00
sum:	3305.31

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.3053/0.00

Run 2:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size:	4KiB
total size:	102400MiB
operation:	write
scope:	global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5055497.94 per second)

102400.00 MiB transferred (19748.04 MiB/sec)

General statistics:

total time:	5.1847s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.09
95th percentile:	0.00
sum:	3384.57

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.3846/0.00

Run 3:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5156592.77 per second)

102400.00 MiB transferred (20142.94 MiB/sec)

General statistics:
total time: 5.0830s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 0.17
95th percentile: 0.00
sum: 3311.78

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.3118/0.00

Run 4:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5127367.53 per second)

102400.00 MiB transferred (20028.78 MiB/sec)

General statistics:

total time: 5.1120s

total number of events: 26214400

Latency (ms):

min: 0.00

avg: 0.00

max: 0.37

95th percentile: 0.00

sum: 3330.83

Threads fairness:

events (avg/stddev): 26214400.0000/0.00

execution time (avg/stddev): 3.3308/0.00

Run 5:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5184398.16 per second)

102400.00 MiB transferred (20251.56 MiB/sec)

General statistics:

total time: 5.0559s
total number of events: 26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.06
95th percentile:	0.00
sum:	3295.39

Threads fairness:

events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.2954/0.00

FILEIO-1

Run 1:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	12086.83
fsyncs/s:	15474.77

Throughput:

read, MiB/s:	0.00
written, MiB/s:	188.86

General statistics:

total time:	30.0074s
total number of events:	826937

Latency (ms):

min:	0.00
avg:	0.04
max:	153.48
95th percentile:	0.06
sum:	29781.43

Threads fairness:

events (avg/stddev):	826937.0000/0.00
execution time (avg/stddev):	29.7814/0.00

Run 2:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	12515.11
fsyncs/s:	16020.75

Throughput:

read, MiB/s:	0.00
written, MiB/s:	195.55

General statistics:

total time:	30.0086s
total number of events:	856207

Latency (ms):

min:	0.00
avg:	0.03
max:	12.07
95th percentile:	0.06
sum:	29781.22

Threads fairness:

events (avg/stddev):	856207.0000/0.00
execution time (avg/stddev):	29.7812/0.00

Run 3:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	13706.24
fsyncs/s:	17548.12

Throughput:

read, MiB/s:	0.00
written, MiB/s:	214.16

General statistics:

total time:	30.0078s
total number of events:	937760

Latency (ms):

min:	0.00
avg:	0.03
max:	10.49
95th percentile:	0.06
sum:	29770.31

Threads fairness:

events (avg/stddev):	937760.0000/0.00
execution time (avg/stddev):	29.7703/0.00

Run 4:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	12457.01
fsyncs/s:	15946.87

Throughput:

read, MiB/s:	0.00
written, MiB/s:	194.64

General statistics:

total time:	30.0067s
total number of events:	852193

Latency (ms):

min:	0.00
avg:	0.03
max:	10.64
95th percentile:	0.06
sum:	29783.78

Threads fairness:

events (avg/stddev):	852193.0000/0.00
execution time (avg/stddev):	29.7838/0.00

Run 5:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	13073.05
fsyncs/s:	16736.50

Throughput:

read, MiB/s:	0.00
written, MiB/s:	204.27

General statistics:

total time:	30.0078s
total number of events:	894406

Latency (ms):

min:	0.00
avg:	0.03
max:	9.45
95th percentile:	0.06
sum:	29766.88

Threads fairness:

events (avg/stddev):	894406.0000/0.00
execution time (avg/stddev):	29.7669/0.00

FileIO-2

Run 1:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	5336.99
writes/s:	3557.97
fsyncs/s:	11389.34

Throughput:

read, MiB/s:	83.39
written, MiB/s:	55.59

General statistics:

total time:	30.0065s
total number of events:	608543

Latency (ms):

min:	0.00
avg:	0.05
max:	57.17
95th percentile:	0.15
sum:	29820.96

Threads fairness:

events (avg/stddev):	608543.0000/0.00
execution time (avg/stddev):	29.8210/0.00

Run 2:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	5088.65
writes/s:	3392.43
fsyncs/s:	10858.48

Throughput:

read, MiB/s:	79.51
written, MiB/s:	53.01

General statistics:

total time:	30.0075s
total number of events:	580213

Latency (ms):

min:	0.00
avg:	0.05
max:	52.38
95th percentile:	0.15
sum:	29830.28

Threads fairness:

events (avg/stddev):	580213.0000/0.00
execution time (avg/stddev):	29.8303/0.00

Run 3:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4845.02
writes/s:	3230.02
fsyncs/s:	10338.02

Throughput:

read, MiB/s:	75.70
written, MiB/s:	50.47

General statistics:

total time:	30.0055s
total number of events:	552375

Latency (ms):

min:	0.00
avg:	0.05
max:	22.88
95th percentile:	0.15
sum:	29833.49

Threads fairness:

events (avg/stddev):	552375.0000/0.00
execution time (avg/stddev):	29.8335/0.00

Run 4:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4914.29
writes/s:	3276.19
fsyncs/s:	10484.21

Throughput:

read, MiB/s:	76.79
written, MiB/s:	51.19

General statistics:

total time:	30.0099s
total number of events:	560308

Latency (ms):

min:	0.00
avg:	0.05
max:	11.06
95th percentile:	0.15
sum:	29826.93

Threads fairness:

events (avg/stddev):	560308.0000/0.00
execution time (avg/stddev):	29.8269/0.00

Run 5:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4974.84
writes/s:	3316.56
fsyncs/s:	10613.39

Throughput:

read, MiB/s:	77.73
written, MiB/s:	51.82

General statistics:

total time:	30.0065s
total number of events:	567148

Latency (ms):

min:	0.00
avg:	0.05
max:	24.77
95th percentile:	0.14
sum:	29828.69

Threads fairness:

events (avg/stddev):	567148.0000/0.00
execution time (avg/stddev):	29.8287/0.00

Docker (cpu=2, RAM=3gb)

CPU test -1

1

```
[kirankodali@Lokeshs-MacBook-Pro-2 Docker % docker run ubuntu-test
Running sysbench with Mode: cpu, Parameter: --cpu-max-prime=30000, Value:
Run 1:
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 746.68

General statistics:
total time: 30.0004s
total number of events: 22402

Latency (ms):
min: 0.85
avg: 1.34
max: 31.12
95th percentile: 2.57
sum: 29968.17

Threads fairness:
events (avg/stddev): 22402.0000/0.00
execution time (avg/stddev): 29.9682/0.00
-----
```

2

```
Run 2:
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 782.72

General statistics:
total time: 30.0006s
total number of events: 23484

Latency (ms):
min: 0.84
avg: 1.28
max: 58.55
95th percentile: 2.30
sum: 29956.32

Threads fairness:
events (avg/stddev): 23484.0000/0.00
execution time (avg/stddev): 29.9563/0.00
-----
```

3	<pre> Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 782.88 General statistics: total time: 30.0018s total number of events: 23487 Latency (ms): min: 0.84 avg: 1.28 max: 15.60 95th percentile: 2.36 sum: 29963.18 Threads fairness: events (avg/stddev): 23487.0000/0.00 execution time (avg/stddev): 29.9632/0.00 -----</pre>	
4	<pre> Run 4: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 803.83 General statistics: total time: 30.0010s total number of events: 24117 Latency (ms): min: 0.85 avg: 1.24 max: 15.58 95th percentile: 2.26 sum: 29959.27 Threads fairness: events (avg/stddev): 24117.0000/0.00 execution time (avg/stddev): 29.9593/0.00 -----</pre>	
5	<pre> Run 5: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 769.14 General statistics: total time: 30.0007s total number of events: 23076 Latency (ms): min: 0.84 avg: 1.30 max: 12.59 95th percentile: 2.35 sum: 29954.83 Threads fairness: events (avg/stddev): 23076.0000/0.00 execution time (avg/stddev): 29.9548/0.00 -----</pre>	

CPU test -2

1	<pre>Running sysbench with Mode: cpu, Parameter: --cpu-max-prime=50000, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 388.71 General statistics: total time: 30.0028s total number of events: 11663 Latency (ms): min: 1.71 avg: 2.57 max: 22.86 95th percentile: 5.00 sum: 29976.03 Threads fairness: events (avg/stddev): 11663.0000/0.00 execution time (avg/stddev): 29.9760/0.00</pre>
2	<pre>Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 386.62 General statistics: total time: 30.0016s total number of events: 11600 Latency (ms): min: 1.71 avg: 2.58 max: 20.36 95th percentile: 5.00 sum: 29980.78 Threads fairness: events (avg/stddev): 11600.0000/0.00 execution time (avg/stddev): 29.9808/0.00</pre>

3

```
Run 3:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 50000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 382.45  
  
General statistics:  
    total time: 30.0027s  
    total number of events: 11475  
  
Latency (ms):  
    min: 1.70  
    avg: 2.61  
    max: 26.14  
    95th percentile: 5.09  
    sum: 29981.15  
  
Threads fairness:  
    events (avg/stddev): 11475.0000/0.00  
    execution time (avg/stddev): 29.9811/0.00
```

4

```
Run 4:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 50000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 385.78  
  
General statistics:  
    total time: 30.0078s  
    total number of events: 11577  
  
Latency (ms):  
    min: 1.71  
    avg: 2.59  
    max: 39.00  
    95th percentile: 5.00  
    sum: 29979.99  
  
Threads fairness:  
    events (avg/stddev): 11577.0000/0.00  
    execution time (avg/stddev): 29.9800/0.00
```

5

```
-----  
Run 6:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 50000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 383.69  
  
General statistics:  
    total time: 30.0014s  
    total number of events: 11512  
  
Latency (ms):  
    min: 1.71  
    avg: 2.60  
    max: 118.54  
    95th percentile: 4.82  
    sum: 29976.21  
  
Threads fairness:  
    events (avg/stddev): 11512.0000/0.00  
    execution time (avg/stddev): 29.9762/0.00
```

Memory test -1

1

```
-----  
Running sysbench with Mode: memory, Parameter: --memory-block-size=2K, Value: 1  
Run 1:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
    block size: 2KiB  
    total size: 102400MiB  
    operation: write  
    scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2836878.73 per second)  
102400.00 MiB transferred (5540.78 MiB/sec)  
  
General statistics:  
    total time: 18.4785s  
    total number of events: 52428800  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 14.16  
    95th percentile: 0.00  
    sum: 10270.42  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 10.2704/0.00
```

2

```
Run 2:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
  block size: 2KiB  
  total size: 102400MiB  
  operation: write  
  scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2891272.00 per second)  
102400.00 MiB transferred (5647.02 MiB/sec)  
  
General statistics:  
  total time: 18.1310s  
  total number of events: 52428800  
  
Latency (ms):  
  min: 0.00  
  avg: 0.00  
  max: 9.95  
  95th percentile: 0.00  
  sum: 10057.53  
  
Threads fairness:  
  events (avg/stddev): 52428800.0000/0.00  
  execution time (avg/stddev): 10.0575/0.00
```

3

```
Run 3:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
  block size: 2KiB  
  total size: 102400MiB  
  operation: write  
  scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2895903.15 per second)  
102400.00 MiB transferred (5656.06 MiB/sec)  
  
General statistics:  
  total time: 18.1024s  
  total number of events: 52428800  
  
Latency (ms):  
  min: 0.00  
  avg: 0.00  
  max: 6.76  
  95th percentile: 0.00  
  sum: 10052.90  
  
Threads fairness:  
  events (avg/stddev): 52428800.0000/0.00  
  execution time (avg/stddev): 10.0529/0.00
```

4	<pre> Run 4: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (2815554.21 per second) 102400.00 MiB transferred (5499.13 MiB/sec) General statistics: total time: 18.6191s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 14.31 95th percentile: 0.00 sum: 10575.69 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 10.3757/0.00 </pre>	
5	<pre> Run 5: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (2862551.09 per second) 102400.00 MiB transferred (5590.92 MiB/sec) General statistics: total time: 18.3133s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 13.17 95th percentile: 0.00 sum: 10120.83 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 10.1208/0.00 </pre>	

Memory test -2

1	<pre> Running sysbench with Mode: memory, Parameter: --memory-block-size=4K, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 4KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 26214400 (2031863.28 per second) 102400.00 MiB transferred (7936.97 MiB/sec) General statistics: total time: 12.8998s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 8.48 95th percentile: 0.00 sum: 8771.37 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 8.7714/0.00 </pre>
2	<pre> Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 4KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 26214400 (1995690.61 per second) 102400.00 MiB transferred (7795.67 MiB/sec) General statistics: total time: 13.1335s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 8.56 95th percentile: 0.00 sum: 8922.65 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 8.9227/0.00 </pre>
3	<pre> Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 4KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 26214400 (2023950.82 per second) 102400.00 MiB transferred (7906.06 MiB/sec) General statistics: total time: 12.9583s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 15.58 95th percentile: 0.00 sum: 8802.24 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 8.8026/0.00 </pre>

4

```
Run 4:
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...
Threads started!

Total operations: 26214400 (2027181.18 per second)
102400.00 MiB transferred (7918.68 MiB/sec)

General statistics:
    total time:           12.9296s
    total number of events: 26214400

Latency (ms):
    min:                 0.00
    avg:                 0.00
    max:                 0.32
    95th percentile:     0.00
    sum:                8795.69

Threads fairness:
    events (avg/stddev): 26214400.0000/0.00
    execution time (avg/stddev): 8.7937/0.00
```

5

```
Run 5:
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...
Threads started!

Total operations: 26214400 (2026745.66 per second)
102400.00 MiB transferred (7916.98 MiB/sec)

General statistics:
    total time:           12.9323s
    total number of events: 26214400

Latency (ms):
    min:                 0.00
    avg:                 0.10
    max:                 7.97
    95th percentile:     0.00
    sum:                8779.56

Threads fairness:
    events (avg/stddev): 26214400.0000/0.00
    execution time (avg/stddev): 8.7795/0.00
```

QEMU (QCOW2, cpu=4, RAM=2gb)

CPU test -1

Run 1:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2378.18

General statistics:

total time:	30.0009s
total number of events:	71350

Latency (ms):

min:	0.41
avg:	0.42
max:	15.07
95th percentile:	0.43
sum:	29974.74

Threads fairness:

events (avg/stddev): 71350.0000/0.00

execution time (avg/stddev): 29.9747/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2383.23

General statistics:

total time:	30.0005s
-------------	----------

total number of events: 71500

Latency (ms):
min: 0.41
avg: 0.42
max: 8.37
95th percentile: 0.43
sum: 29967.53

Threads fairness:
events (avg/stddev): 71500.0000/0.00
execution time (avg/stddev): 29.9675/0.00

Run 3:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2389.45

General statistics:
total time: 30.0011s
total number of events: 71690

Latency (ms):
min: 0.41
avg: 0.42
max: 4.42
95th percentile: 0.42
sum: 29978.39

Threads fairness:
events (avg/stddev): 71690.0000/0.00
execution time (avg/stddev): 29.9784/0.00

Run 4:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2378.64

General statistics:
total time: 30.0006s
total number of events: 71363

Latency (ms):
min: 0.41
avg: 0.42
max: 22.90
95th percentile: 0.43
sum: 29980.64

Threads fairness:
events (avg/stddev): 71363.0000/0.00
execution time (avg/stddev): 29.9806/0.00

Run 5:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2397.45

General statistics:
total time: 30.0005s
total number of events: 71926

Latency (ms):
min: 0.41
avg: 0.42
max: 2.61
95th percentile: 0.42
sum: 29981.63

Threads fairness:
events (avg/stddev): 71926.0000/0.00
execution time (avg/stddev): 29.9816/0.00

CPU test -2

Run 1:

Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1187.73

General statistics:
total time: 30.0009s
total number of events: 35641

Latency (ms):
min: 0.82
avg: 0.84
max: 2.60
95th percentile: 0.87
sum: 29976.88

Threads fairness:
events (avg/stddev): 35641.0000/0.00
execution time (avg/stddev): 29.9769/0.00

Run 2:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1190.61

General statistics:
total time: 30.0008s
total number of events: 35720

Latency (ms):
min: 0.82
avg: 0.84

max: 6.74
95th percentile: 0.86
sum: 29976.24

Threads fairness:
events (avg/stddev): 35720.0000/0.00
execution time (avg/stddev): 29.9762/0.00

Run 3:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1190.31

General statistics:
total time: 30.0007s
total number of events: 35711

Latency (ms):
min: 0.82
avg: 0.84
max: 1.78
95th percentile: 0.87
sum: 29983.61

Threads fairness:
events (avg/stddev): 35711.0000/0.00
execution time (avg/stddev): 29.9836/0.00

Run 4:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1187.60

General statistics:
total time: 30.0007s
total number of events: 35630

Latency (ms):
min: 0.82
avg: 0.84
max: 5.25
95th percentile: 0.86
sum: 29975.53

Threads fairness:
events (avg/stddev): 35630.0000/0.00
execution time (avg/stddev): 29.9755/0.00

Run 5:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1188.51

General statistics:
total time: 30.0005s
total number of events: 35657

Latency (ms):
min: 0.82
avg: 0.84
max: 1.80
95th percentile: 0.87
sum: 29979.89

Threads fairness:
events (avg/stddev): 35657.0000/0.00
execution time (avg/stddev): 29.9799/0.00

Memory test -1

Run 1:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6790568.76 per second)

102400.00 MiB transferred (13262.83 MiB/sec)

General statistics:

total time:	7.7203s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	0.60
95th percentile:	0.00
sum:	4060.86

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	4.0609/0.00

Run 2:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6817082.88 per second)

102400.00 MiB transferred (13314.61 MiB/sec)

General statistics:
total time: 7.6901s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.06
95th percentile: 0.00
sum: 4050.05

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0501/0.00

Run 3:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6804158.93 per second)

102400.00 MiB transferred (13289.37 MiB/sec)

General statistics:
total time: 7.7046s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.55
95th percentile: 0.00
sum: 4059.67

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0597/0.00

Run 4:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6806556.32 per second)

102400.00 MiB transferred (13294.06 MiB/sec)

General statistics:
total time: 7.7018s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.46
95th percentile: 0.00
sum: 4058.62

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0586/0.00

Run 5:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6817759.51 per second)

102400.00 MiB transferred (13315.94 MiB/sec)

General statistics:
total time: 7.6893s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.11
95th percentile: 0.00
sum: 4048.07

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0481/0.00

Memory test -2

Run 1:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5024599.96 per second)
102400.00 MiB transferred (19627.34 MiB/sec)

General statistics:
total time: 5.2165s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 0.10
95th percentile: 0.00
sum: 3397.12

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.3971/0.00

Run 2:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5029097.55 per second)

102400.00 MiB transferred (19644.91 MiB/sec)

General statistics:
total time: 5.2120s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 0.07
95th percentile: 0.00
sum: 3394.38

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.3944/0.00

Run 3:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5024361.76 per second)

102400.00 MiB transferred (19626.41 MiB/sec)

General statistics:

total time:	5.2169s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.07
95th percentile:	0.00
sum:	3397.18

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.3972/0.00

Run 4:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size:	4KiB
total size:	102400MiB
operation:	write
scope:	global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5026747.95 per second)

102400.00 MiB transferred (19635.73 MiB/sec)

General statistics:

total time:	5.2144s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.06
95th percentile:	0.00
sum:	3395.32

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
----------------------	--------------------

execution time (avg/stddev): 3.3953/0.00

Run 5:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4967886.03 per second)

102400.00 MiB transferred (19405.80 MiB/sec)

General statistics:

total time: 5.2762s

total number of events: 26214400

Latency (ms):

min: 0.00

avg: 0.00

max: 0.41

95th percentile: 0.00

sum: 3435.42

Threads fairness:

events (avg/stddev): 26214400.0000/0.00

execution time (avg/stddev): 3.4354/0.00

FileIO test -1

Run 1:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 3751.32
writes/s: 2500.87
fsyncs/s: 8006.30

Throughput:
read, MiB/s: 58.61
written, MiB/s: 39.08

General statistics:
total time: 30.0077s
total number of events: 427746

Latency (ms):
min: 0.00
avg: 0.07
max: 34.12
95th percentile: 0.17
sum: 29855.92

Threads fairness:
events (avg/stddev): 427746.0000/0.00
execution time (avg/stddev): 29.8559/0.00

Run 2:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s: 3608.66
writes/s: 2405.77
fsyncs/s: 7698.64

Throughput:
read, MiB/s: 56.39
written, MiB/s: 37.59

General statistics:
total time: 30.0104s
total number of events: 411417

Latency (ms):
min: 0.00
avg: 0.07
max: 66.44
95th percentile: 0.18
sum: 29854.03

Threads fairness:
events (avg/stddev): 411417.0000/0.00
execution time (avg/stddev): 29.8540/0.00

Run 3:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 3605.17
writes/s: 2403.47
fsyncs/s: 7693.66

Throughput:
read, MiB/s: 56.33
written, MiB/s: 37.55

General statistics:
total time: 30.0125s
total number of events: 411123

Latency (ms):
min: 0.00
avg: 0.07
max: 34.31
95th percentile: 0.18
sum: 29857.98

Threads fairness:
events (avg/stddev): 411123.0000/0.00
execution time (avg/stddev): 29.8580/0.00

Run 4:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 3441.52
writes/s: 2294.33
fsyncs/s: 7344.96

Throughput:
read, MiB/s: 53.77
written, MiB/s: 35.85

General statistics:
total time: 30.0082s
total number of events: 392416

Latency (ms):
min: 0.00
avg: 0.08
max: 36.08
95th percentile: 0.19
sum: 29857.82

Threads fairness:
events (avg/stddev): 392416.0000/0.00
execution time (avg/stddev): 29.8578/0.00

Run 5:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 3580.87
writes/s: 2387.25
fsyncs/s: 7640.26

Throughput:
read, MiB/s: 55.95
written, MiB/s: 37.30

General statistics:
total time: 30.0654s
total number of events: 409164

Latency (ms):
min: 0.00
avg: 0.07
max: 34.25
95th percentile: 0.19
sum: 29852.62

Threads fairness:
events (avg/stddev): 409164.0000/0.00
execution time (avg/stddev): 29.8526/0.00

FileIO test -2

Run 1:
Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10499.33
fsyncs/s:	13439.94

Throughput:

read, MiB/s:	0.00
written, MiB/s:	164.05

General statistics:

total time:	30.0108s
total number of events:	718324

Latency (ms):

min:	0.00
avg:	0.04
max:	35.31
95th percentile:	0.06
sum:	29783.53

Threads fairness:

events (avg/stddev):	718324.0000/0.00
execution time (avg/stddev):	29.7835/0.00

Run 2:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10240.25
fsyncs/s:	13108.18

Throughput:

read, MiB/s:	0.00
written, MiB/s:	160.00

General statistics:

total time:	30.0084s
total number of events:	700536

Latency (ms):

min:	0.00
avg:	0.04
max:	24.34
95th percentile:	0.06
sum:	29792.89

Threads fairness:

events (avg/stddev):	700536.0000/0.00
execution time (avg/stddev):	29.7929/0.00

Run 3:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10254.99
fsyncs/s:	13129.09

Throughput:

read, MiB/s:	0.00
written, MiB/s:	160.23

General statistics:

total time:	30.0041s
total number of events:	701509

Latency (ms):

```
min:          0.00
avg:          0.04
max:         42.73
95th percentile:   0.06
sum:        29788.46
```

Threads fairness:
events (avg/stddev): 701509.0000/0.00
execution time (avg/stddev): 29.7885/0.00

Run 4:
Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:
reads/s: 0.00
writes/s: 10335.03
fsyncs/s: 13231.31

Throughput:
read, MiB/s: 0.00
written, MiB/s: 161.48

General statistics:
total time: 30.0138s
total number of events: 707202

Latency (ms):
min: 0.00
avg: 0.04
max: 18.67
95th percentile: 0.06
sum: 29806.00

Threads fairness:
events (avg/stddev): 707202.0000/0.00
execution time (avg/stddev): 29.8060/0.00

Run 5:
Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10198.18
fsyncs/s:	13056.03

Throughput:

read, MiB/s:	0.00
written, MiB/s:	159.35

General statistics:

total time:	30.0104s
total number of events:	697851

Latency (ms):

min:	0.00
avg:	0.04
max:	76.63
95th percentile:	0.06
sum:	29802.35

Threads fairness:

events (avg/stddev):	697851.0000/0.00
execution time (avg/stddev):	29.8023/0.00

QEMU (RAW, 4Cores, 2GB RAM)

CPU test 1(--cpu-max-prime=30000)

Run 1:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1511.81

General statistics:

total time:	30.0008s
total number of events:	45357

Latency (ms):

min:	0.65
avg:	0.66
max:	1.13
95th percentile:	0.68
sum:	29962.60

Threads fairness:

events (avg/stddev):	45357.0000/0.00
execution time (avg/stddev):	29.9626/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1511.05

General statistics:

total time:	30.0008s
total number of events:	45334

Latency (ms):

min:	0.65
avg:	0.66
max:	1.56
95th percentile:	0.68
sum:	29963.21

Threads fairness:

events (avg/stddev):	45334.0000/0.00
execution time (avg/stddev):	29.9632/0.00

Run 3:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second:	1506.64
--------------------	---------

General statistics:

total time:	30.0003s
total number of events:	45201

Latency (ms):

min:	0.65
avg:	0.66
max:	3.04
95th percentile:	0.68
sum:	29944.35

Threads fairness:

events (avg/stddev):	45201.0000/0.00
execution time (avg/stddev):	29.9443/0.00

Run 4:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1493.74

General statistics:

total time: 30.0004s

total number of events: 44814

Latency (ms):

min: 0.65

avg: 0.67

max: 13.93

95th percentile: 0.70

sum: 29939.97

Threads fairness:

events (avg/stddev): 44814.0000/0.00

execution time (avg/stddev): 29.9400/0.00

Run 5:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1480.31

General statistics:

total time:	30.0003s
total number of events:	44411

Latency (ms):

min:	0.64
avg:	0.67
max:	5.55
95th percentile:	0.74
sum:	29928.26

Threads fairness:

events (avg/stddev):	44411.0000/0.00
execution time (avg/stddev):	29.9283/0.00

CPU-2(--cpu-max-prime=50000)

Run 1:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 737.05

General statistics:

total time:	30.0004s
total number of events:	22113

Latency (ms):

```
min:          1.30
avg:          1.35
max:          5.90
95th percentile:   1.44
sum:        29938.68
```

Threads fairness:

```
events (avg/stddev): 22113.0000/0.00
execution time (avg/stddev): 29.9387/0.00
```

Run 2:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

```
events per second: 746.32
```

General statistics:

```
total time:      30.0013s
total number of events: 22391
```

Latency (ms):

```
min:          1.29
avg:          1.34
max:          5.34
95th percentile:   1.37
sum:        29927.64
```

Threads fairness:

```
events (avg/stddev): 22391.0000/0.00
execution time (avg/stddev): 29.9276/0.00
```

Run 3:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 745.17

General statistics:

total time: 30.0004s

total number of events: 22356

Latency (ms):

min: 1.29

avg: 1.34

max: 6.90

95th percentile: 1.39

sum: 29926.76

Threads fairness:

events (avg/stddev): 22356.0000/0.00

execution time (avg/stddev): 29.9268/0.00

Run 4:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 747.62

General statistics:

total time:	30.0008s
total number of events:	22430

Latency (ms):

min:	1.29
avg:	1.33
max:	2.90
95th percentile:	1.37
sum:	29924.15

Threads fairness:

events (avg/stddev):	22430.0000/0.00
execution time (avg/stddev):	29.9241/0.00

Run 5:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second:	747.79
--------------------	--------

General statistics:

total time:	30.0010s
total number of events:	22435

Latency (ms):

min:	1.29
avg:	1.33
max:	3.54
95th percentile:	1.37
sum:	29939.31

Threads fairness:

events (avg/stddev):	22435.0000/0.00
----------------------	-----------------

execution time (avg/stddev): 29.9393/0.00

Memory-1 (2K)

Run 1:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (4279591.01 per second)

102400.00 MiB transferred (8358.58 MiB/sec)

General statistics:

total time: 12.2501s

total number of events: 52428800

Latency (ms):

min: 0.00

avg: 0.00

max: 0.12

95th percentile: 0.00

sum: 6452.13

Threads fairness:

events (avg/stddev): 52428800.0000/0.00

execution time (avg/stddev): 6.4521/0.00

Run 2:

Command: sysbench memory --memory-block-size=2K run

Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (4275684.69 per second)

102400.00 MiB transferred (8350.95 MiB/sec)

General statistics:
total time: 12.2613s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 1.18
95th percentile: 0.00
sum: 6460.97

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 6.4610/0.00

Run 3:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (4134882.67 per second)

102400.00 MiB transferred (8075.94 MiB/sec)

General statistics:

total time:	12.6787s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	1.71
95th percentile:	0.00
sum:	6692.40

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	6.6924/0.00

Run 4:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (4155373.20 per second)

102400.00 MiB transferred (8115.96 MiB/sec)

General statistics:

total time:	12.6163s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	2.72
95th percentile:	0.00
sum:	6645.86

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	6.6459/0.00

Run 5:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (4175476.31 per second)

102400.00 MiB transferred (8155.23 MiB/sec)

General statistics:

total time: 12.555s
total number of events: 52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	1.02
95th percentile:	0.00
sum:	6618.49

Threads fairness:

events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 6.6185

Memory-2(4k)

Run 1:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (3077817.01 per second)

102400.00 MiB transferred (12022.72 MiB/sec)

General statistics:

total time:	8.5164s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00

max: 0.93
95th percentile: 0.00
sum: 5549.89

Threads fairness:

events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 5.5499/0.00

Run 2:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (3154584.46 per second)

102400.00 MiB transferred (12322.60 MiB/sec)

General statistics:

total time: 8.3091s
total number of events: 26214400

Latency (ms):

min: 0.00
avg: 0.00
max: 0.14
95th percentile: 0.00
sum: 5413.67

Threads fairness:

events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 5.4137/0.00

Run 3:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (3161921.83 per second)

102400.00 MiB transferred (12351.26 MiB/sec)

General statistics:

total time: 8.2898s

total number of events: 26214400

Latency (ms):

min: 0.00

avg: 0.00

max: 0.15

95th percentile: 0.00

sum: 5401.21

Threads fairness:

events (avg/stddev): 26214400.0000/0.00

execution time (avg/stddev): 5.4012/0.00

Run 4:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (3153080.51 per second)

102400.00 MiB transferred (12316.72 MiB/sec)

General statistics:

total time: 8.3131s
total number of events: 26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.47
95th percentile:	0.00
sum:	5416.02

Threads fairness:

events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 5.4160/0.00

Run 5:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (3165897.68 per second)

102400.00 MiB transferred (12366.79 MiB/sec)

General statistics:

total time:	8.2795s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.12
95th percentile:	0.00
sum:	5396.46

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	5.3965/0.00

FileIO-1

Run 1:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Initializing worker threads...

Threads started!

File operations:

reads/s:	2754.74
writes/s:	1836.49
fsyncs/s:	5878.65

Throughput:

read, MiB/s:	43.04
written, MiB/s:	28.70

General statistics:

total time:	30.0129s
total number of events:	314112

Latency (ms):

min:	0.00
avg:	0.10
max:	22.10
95th percentile:	0.21
sum:	29845.97

Threads fairness:

events (avg/stddev):	314112.0000/0.00
execution time (avg/stddev):	29.8460/0.00

Run 2:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Initializing worker threads...

Threads started!

File operations:

reads/s:	2677.83
writes/s:	1785.20
fsyncs/s:	5714.34

Throughput:

read, MiB/s:	41.84
written, MiB/s:	27.89

General statistics:

total time:	30.0149s
total number of events:	305353

Latency (ms):

min:	0.00
avg:	0.10
max:	66.20
95th percentile:	0.24
sum:	29848.88

Threads fairness:

events (avg/stddev):	305353.0000/0.00
execution time (avg/stddev):	29.8489/0.00

Run 3:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	2689.48
writes/s:	1792.98
fsyncs/s:	5740.54

Throughput:

read, MiB/s:	42.02
written, MiB/s:	28.02

General statistics:

total time:	30.0117s
total number of events:	306690

Latency (ms):

min:	0.00
avg:	0.10
max:	40.26
95th percentile:	0.23
sum:	29841.56

Threads fairness:

events (avg/stddev):	306690.0000/0.00
execution time (avg/stddev):	29.8416/0.00

Run 4:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	2615.64
writes/s:	1743.74
fsyncs/s:	5582.31

Throughput:

read, MiB/s:	40.87
written, MiB/s:	27.25

General statistics:

total time:	30.0140s
total number of events:	298270

Latency (ms):

min:	0.00
avg:	0.10
max:	34.28
95th percentile:	0.24
sum:	29743.94

Threads fairness:

events (avg/stddev):	298270.0000/0.00
execution time (avg/stddev):	29.7439/0.00

Run 5:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	2667.03
writes/s:	1778.02
fsyncs/s:	5691.79

Throughput:

read, MiB/s:	41.67
written, MiB/s:	27.78

General statistics:

total time:	30.0101s
total number of events:	304088

Latency (ms):

min:	0.00
avg:	0.10
max:	29.75
95th percentile:	0.24
sum:	29714.73

Threads fairness:

events (avg/stddev):	304088.0000/0.00
execution time (avg/stddev):	29.7147/0.00

FileIO-2(seqwr)

Run 1:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	7297.39
fsyncs/s:	9341.26

Throughput:

read, MiB/s:	0.00
written, MiB/s:	114.02

General statistics:

total time:	30.0100s
total number of events:	499210

Latency (ms):

min:	0.00
avg:	0.06
max:	7.42
95th percentile:	0.10
sum:	29581.62

Threads fairness:

events (avg/stddev):	499210.0000/0.00
execution time (avg/stddev):	29.5816/0.00

Run 2:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	7207.31
fsyncs/s:	9227.09

Throughput:

read, MiB/s:	0.00
written, MiB/s:	112.61

General statistics:

total time:	30.0104s
total number of events:	493088

Latency (ms):

min:	0.00
avg:	0.06
max:	12.75
95th percentile:	0.10
sum:	29511.51

Threads fairness:

events (avg/stddev):	493088.0000/0.00
execution time (avg/stddev):	29.5115/0.00

Run 3:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	7180.76
fsyncs/s:	9191.94

Throughput:

read, MiB/s:	0.00
written, MiB/s:	112.20

General statistics:

total time:	30.0100s
total number of events:	491229

Latency (ms):

min:	0.00
avg:	0.06
max:	9.03
95th percentile:	0.10
sum:	29507.32

Threads fairness:

events (avg/stddev):	491229.0000/0.00
execution time (avg/stddev):	29.5073/0.00

Run 4:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	7224.13
fsyncs/s:	9247.86

Throughput:

read, MiB/s:	0.00
written, MiB/s:	112.88

General statistics:

total time:	30.0097s
total number of events:	494205

Latency (ms):

min:	0.00
avg:	0.06
max:	20.76
95th percentile:	0.10
sum:	29453.54

Threads fairness:

events (avg/stddev):	494205.0000/0.00
execution time (avg/stddev):	29.4535/0.00

Run 5:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	7217.64
fsyncs/s:	9242.42

Throughput:

read, MiB/s:	0.00
written, MiB/s:	112.78

General statistics:

total time:	30.0104s
total number of events:	493858

Latency (ms):

min:	0.00
avg:	0.06
max:	16.28
95th percentile:	0.10
sum:	29494.39

Threads fairness:

events (avg/stddev):	493858.0000/0.00
execution time (avg/stddev):	29.4944/0.00

Docker(CPU=4, RAM=2gb)

CPU test -1

1	<pre> Running sysbench with Mode: cpu, Parameter: --cpu-max-prime=30000, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 1573.33 General statistics: total time: 30.0013s total number of events: 47203 Latency (ms): min: 0.42 avg: 0.64 max: 25.00 95th percentile: 2.11 sum: 29991.41 Threads fairness: events (avg/stddev): 47203.0000/0.00 execution time (avg/stddev): 29.9914/0.00 -----</pre>	
2	<pre> Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 1587.09 General statistics: total time: 30.0009s total number of events: 47617 Latency (ms): min: 0.42 avg: 0.63 max: 14.39 95th percentile: 2.11 sum: 29989.73 Threads fairness: events (avg/stddev): 47617.0000/0.00 execution time (avg/stddev): 29.9897/0.00 -----</pre>	
3	<pre> Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 1542.48 General statistics: total time: 30.0012s total number of events: 46279 Latency (ms): min: 0.42 avg: 0.65 max: 24.76 95th percentile: 2.11 sum: 29984.32 Threads fairness: events (avg/stddev): 46279.0000/0.00 execution time (avg/stddev): 29.9843/0.00 -----</pre>	

4

```
Run 4:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 30000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 1583.58  
  
General statistics:  
    total time: 30.0010s  
    total number of events: 47512  
  
Latency (ms):  
    min: 0.42  
    avg: 0.63  
    max: 21.06  
    95th percentile: 2.11  
    sum: 29990.26  
  
Threads fairness:  
    events (avg/stddev): 47512.0000/0.00  
    execution time (avg/stddev): 29.9903/0.00
```

5

```
Run 5:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 30000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 1598.49  
  
General statistics:  
    total time: 30.0003s  
    total number of events: 47958  
  
Latency (ms):  
    min: 0.42  
    avg: 0.63  
    max: 11.33  
    95th percentile: 2.11  
    sum: 29988.83  
  
Threads fairness:  
    events (avg/stddev): 47958.0000/0.00  
    execution time (avg/stddev): 29.9888/0.00
```

CPU test -2

1	<pre> Running sysbench with Mode: cpu, Parameter: --cpu-max-prime=50000, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 799.76 General statistics: total time: 30.0006s total number of events: 23995 Latency (ms): min: 0.85 avg: 1.25 max: 19.51 95th percentile: 4.25 sum: 29987.93 Threads fairness: events (avg/stddev): 23995.0000/0.00 execution time (avg/stddev): 29.9879/0.00 -----</pre>	
2	<pre> Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 756.82 General statistics: total time: 30.0013s total number of events: 22706 Latency (ms): min: 0.85 avg: 1.32 max: 119.45 95th percentile: 4.33 sum: 29990.78 Threads fairness: events (avg/stddev): 22706.0000/0.00 execution time (avg/stddev): 29.9908/0.00 -----</pre>	

3	<pre> Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 693.33 General statistics: total time: 30.0008s total number of events: 20802 Latency (ms): min: 0.85 avg: 1.44 max: 117.95 95th percentile: 4.33 sum: 29989.80 Threads fairness: events (avg/stddev): 20802.0000/0.00 execution time (avg/stddev): 29.9898/0.00 -----</pre>	
4	<pre> Run 4: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 763.02 General statistics: total time: 30.0014s total number of events: 22893 Latency (ms): min: 0.85 avg: 1.31 max: 36.31 95th percentile: 4.33 sum: 29992.57 Threads fairness: events (avg/stddev): 22893.0000/0.00 execution time (avg/stddev): 29.9926/0.00 -----</pre>	
5	<pre> Run 5: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 761.37 General statistics: total time: 30.0013s total number of events: 22844 Latency (ms): min: 0.85 avg: 1.31 max: 29.02 95th percentile: 4.33 sum: 29992.12 Threads fairness: events (avg/stddev): 22844.0000/0.00 execution time (avg/stddev): 29.9921/0.00 -----</pre>	

Memory test -1

1	<pre>Running sysbench with Mode: memory, Parameter: --memory-block-size=2K, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (4935024.24 per second) 102400.00 MiB transferred (9638.72 MiB/sec) General statistics: total time: 10.6218s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 13.87 95th percentile: 0.00 sum: 5918.84 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 5.9188/0.00</pre>
2	<pre>Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (4814516.96 per second) 102400.00 MiB transferred (9403.35 MiB/sec) General statistics: total time: 10.8875s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 6.93 95th percentile: 0.00 sum: 6888.47 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 6.0805/0.00</pre>

3	<pre> Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (5000142.16 per second) 102400.00 MiB transferred (9765.90 MiB/sec) General statistics: total time: 10.4845s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 7.94 95th percentile: 0.00 sum: 5849.24 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 5.8492/0.00 </pre>
4	<pre> Run 4: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (4868570.13 per second) 102400.00 MiB transferred (9508.93 MiB/sec) General statistics: total time: 10.7669s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 19.95 95th percentile: 0.00 sum: 6039.59 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 6.0396/0.00 </pre>

5	<pre> Run 5: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 2KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 52428800 (5017726.06 per second) 102400.00 MiB transferred (9800.25 MiB/sec) General statistics: total time: 10.4469s total number of events: 52428800 Latency (ms): min: 0.00 avg: 0.00 max: 7.17 95th percentile: 0.00 sum: 5843.21 Threads fairness: events (avg/stddev): 52428800.0000/0.00 execution time (avg/stddev): 5.8432/0.00 </pre>
---	--

Memory test -2

1	<pre> Running sysbench with Mode: memory, Parameter: --memory-block-size=4K, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Running memory speed test with the following options: block size: 4KiB total size: 102400MiB operation: write scope: global Initializing worker threads... Threads started! Total operations: 26214400 (3645841.62 per second) 102400.00 MiB transferred (14241.57 MiB/sec) General statistics: total time: 7.1880s total number of events: 26214400 Latency (ms): min: 0.00 avg: 0.00 max: 7.19 95th percentile: 0.00 sum: 4983.03 Threads fairness: events (avg/stddev): 26214400.0000/0.00 execution time (avg/stddev): 4.9038/0.00 </pre>
2	
3	
4	
5	

QEMU (QCOW2, CPU=4, RAM=3gb)

CPU test -1

Run 1:

Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2353.69

General statistics:

total time: 30.0041s
total number of events: 70638

Latency (ms):

min:	0.41
avg:	0.42
max:	14.27
95th percentile:	0.44
sum:	29971.72

Threads fairness:

events (avg/stddev): 70638.0000/0.00
execution time (avg/stddev): 29.9717/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2332.04

General statistics:

total time: 30.0027s
total number of events: 69973

Latency (ms):

min: 0.41
avg: 0.43
max: 52.94
95th percentile: 0.45
sum: 29968.45

Threads fairness:
events (avg/stddev): 69973.0000/0.00
execution time (avg/stddev): 29.9684/0.00

Run 3:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2366.96

General statistics:
total time: 30.0009s
total number of events: 71015

Latency (ms):
min: 0.41
avg: 0.42
max: 18.33
95th percentile: 0.43
sum: 29965.82

Threads fairness:
events (avg/stddev): 71015.0000/0.00
execution time (avg/stddev): 29.9658/0.00

Run 4:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2370.47

General statistics:
total time: 30.0005s
total number of events: 71120

Latency (ms):
min: 0.41
avg: 0.42
max: 49.04
95th percentile: 0.43
sum: 29968.10

Threads fairness:
events (avg/stddev): 71120.0000/0.00
execution time (avg/stddev): 29.9681/0.00

Run 5:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2324.23

General statistics:
total time: 30.0009s
total number of events: 69755

Latency (ms):
min: 0.41
avg: 0.43
max: 11.24
95th percentile: 0.45
sum: 29945.86

Threads fairness:
events (avg/stddev): 69755.0000/0.00
execution time (avg/stddev): 29.9459/0.00

CPU test -2

Run 1:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1170.33

General statistics:
total time: 30.0007s
total number of events: 35114

Latency (ms):
min: 0.82
avg: 0.85
max: 27.90
95th percentile: 0.89
sum: 29930.19

Threads fairness:
events (avg/stddev): 35114.0000/0.00
execution time (avg/stddev): 29.9302/0.00

Run 2:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1179.46

General statistics:
total time: 30.0010s
total number of events: 35387

Latency (ms):
min: 0.79
avg: 0.85
max: 3.34
95th percentile: 0.89
sum: 29957.66

Threads fairness:
events (avg/stddev): 35387.0000/0.00
execution time (avg/stddev): 29.9577/0.00

Run 3:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1169.56

General statistics:
total time: 30.0018s
total number of events: 35093

Latency (ms):
min: 0.82
avg: 0.85
max: 11.45
95th percentile: 0.89
sum: 29942.78

Threads fairness:
events (avg/stddev): 35093.0000/0.00
execution time (avg/stddev): 29.9428/0.00

Run 4:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1176.59

General statistics:
total time: 30.0012s
total number of events: 35305

Latency (ms):

min:	0.82
avg:	0.85
max:	32.47
95th percentile:	0.87
sum:	29956.02

Threads fairness:
events (avg/stddev): 35305.0000/0.00
execution time (avg/stddev): 29.9560/0.00

Run 5:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1141.01

General statistics:
total time: 30.0009s
total number of events: 34233

Latency (ms):

min:	0.82
avg:	0.88
max:	19.59
95th percentile:	0.95
sum:	29956.46

Threads fairness:
events (avg/stddev): 34233.0000/0.00
execution time (avg/stddev): 29.9565

Memory test -1

Run 1:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6628777.34 per second)

102400.00 MiB transferred (12946.83 MiB/sec)

General statistics:
total time: 7.9087s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 5.90
95th percentile: 0.00
sum: 4162.10

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.1621/0.00

Run 2:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6675643.21 per second)

102400.00 MiB transferred (13038.37 MiB/sec)

General statistics:
total time: 7.8524s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 1.38
95th percentile: 0.00
sum: 4139.10

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.1391/0.00

Run 3:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6635042.36 per second)

102400.00 MiB transferred (12959.07 MiB/sec)

General statistics:
total time: 7.9005s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 4.22
95th percentile: 0.00
sum: 4160.99

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.1610/0.00

Run 4:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6762220.19 per second)

102400.00 MiB transferred (13207.46 MiB/sec)

General statistics:
total time: 7.7526s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 0.08
95th percentile: 0.00
sum: 4079.72

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0797/0.00

Run 5:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6777265.44 per second)

102400.00 MiB transferred (13236.85 MiB/sec)

General statistics:
total time: 7.7347s

total number of events: 52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	0.23
95th percentile:	0.00
sum:	4075.12

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	4.0751/0.00

Memory test -2

Run 1:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4987763.52 per second)

102400.00 MiB transferred (19483.45 MiB/sec)

General statistics:

total time:	5.2552s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.58
95th percentile:	0.00
sum:	3421.90

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.4219/0.00

Run 2:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4927595.36 per second)

102400.00 MiB transferred (19248.42 MiB/sec)

General statistics:
total time: 5.3184s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 0.22
95th percentile: 0.00
sum: 3461.34

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.4613/0.00

Run 3:
Command: sysbench memory --memory-block-size=4K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4912644.81 per second)

102400.00 MiB transferred (19190.02 MiB/sec)

General statistics:

total time:	5.3351s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.17
95th percentile:	0.00
sum:	3471.93

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.4719/0.00

Run 4:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4946569.16 per second)

102400.00 MiB transferred (19322.54 MiB/sec)

General statistics:

total time:	5.2988s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.40
95th percentile:	0.00
sum:	3450.82

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.4508/0.00

Run 5:

Command: sysbench memory --memory-block-size=4K run

Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (4902200.73 per second)

102400.00 MiB transferred (19149.22 MiB/sec)

General statistics:
total time: 5.3463s
total number of events: 26214400

Latency (ms):
min: 0.00
avg: 0.00
max: 0.40
95th percentile: 0.00
sum: 3478.32

Threads fairness:
events (avg/stddev): 26214400.0000/0.00
execution time (avg/stddev): 3.4783/0.00

FileIO test -1

Run 1:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4644.55
writes/s:	3096.37
fsyncs/s:	9910.27

Throughput:

read, MiB/s:	72.57
written, MiB/s:	48.38

General statistics:

total time:	30.0087s
total number of events:	529573

Latency (ms):

min:	0.00
avg:	0.06
max:	33.61
95th percentile:	0.16
sum:	29821.68

Threads fairness:

events (avg/stddev):	529573.0000/0.00
execution time (avg/stddev):	29.8217/0.00

Run 2:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4462.55
writes/s:	2975.01
fsyncs/s:	9523.24

Throughput:
read, MiB/s: 69.73
written, MiB/s: 46.48

General statistics:
total time: 30.0126s
total number of events: 508922

Latency (ms):
min: 0.00
avg: 0.06
max: 34.18
95th percentile: 0.16
sum: 29835.81

Threads fairness:
events (avg/stddev): 508922.0000/0.00
execution time (avg/stddev): 29.8358/0.00

Run 3:
Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:
reads/s: 4280.90
writes/s: 2853.92
fsyncs/s: 9135.44

Throughput:
read, MiB/s: 66.89
written, MiB/s: 44.59

General statistics:
total time: 30.0114s
total number of events: 488181

Latency (ms):
min: 0.00
avg: 0.06
max: 33.64
95th percentile: 0.17

sum: 29801.64

Threads fairness:

events (avg/stddev): 488181.0000/0.00
execution time (avg/stddev): 29.8016/0.00

Run 4:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Initializing worker threads...

Threads started!

File operations:

reads/s:	4309.04
writes/s:	2872.70
fsyncs/s:	9193.89

Throughput:

read, MiB/s:	67.33
written, MiB/s:	44.89

General statistics:

total time:	30.0059s
total number of events:	491250

Latency (ms):

min:	0.00
avg:	0.06
max:	34.17
95th percentile:	0.17
sum:	29829.20

Threads fairness:

events (avg/stddev): 491250.0000/0.00
execution time (avg/stddev): 29.8292/0.00

Run 5:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4290.53
writes/s:	2860.35
fsyncs/s:	9156.53

Throughput:

read, MiB/s:	67.04
written, MiB/s:	44.69

General statistics:

total time:	30.0094s
total number of events:	489262

Latency (ms):

min:	0.00
avg:	0.06
max:	35.12
95th percentile:	0.18
sum:	29827.87

Threads fairness:

events (avg/stddev):	489262.0000/0.00
execution time (avg/stddev):	29.8279/0.00

FileIO test -2

Run 1:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11000.54
fsyncs/s:	14084.93

Throughput:

read, MiB/s:	0.00
written, MiB/s:	171.88

General statistics:

total time:	30.0068s
total number of events:	752627

Latency (ms):

min:	0.00
avg:	0.04
max:	82.38
95th percentile:	0.06
sum:	29782.38

Threads fairness:

events (avg/stddev):	752627.0000/0.00
execution time (avg/stddev):	29.7824/0.00

Run 2:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10649.01
fsyncs/s:	13632.44

Throughput:

read, MiB/s:	0.00
--------------	------

written, MiB/s: 166.39

General statistics:

total time: 30.0076s
total number of events: 728520

Latency (ms):

min:	0.00
avg:	0.04
max:	28.73
95th percentile:	0.06
sum:	29786.02

Threads fairness:

events (avg/stddev): 728520.0000/0.00
execution time (avg/stddev): 29.7860/0.00

Run 3:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing sequential write (creation) test

Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10779.53
fsyncs/s:	13800.56

Throughput:

read, MiB/s:	0.00
written, MiB/s:	168.43

General statistics:

total time: 30.0276s
total number of events: 737991

Latency (ms):

min:	0.00
avg:	0.04
max:	17.41
95th percentile:	0.06
sum:	29798.58

Threads fairness:

events (avg/stddev): 737991.0000/0.00
execution time (avg/stddev): 29.7986/0.00

Run 4:
Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:
reads/s: 0.00
writes/s: 11430.46
fsyncs/s: 14635.17

Throughput:
read, MiB/s: 0.00
written, MiB/s: 178.60

General statistics:
total time: 30.0070s
total number of events: 782042

Latency (ms):
min: 0.00
avg: 0.04
max: 32.96
95th percentile: 0.06
sum: 29795.71

Threads fairness:
events (avg/stddev): 782042.0000/0.00
execution time (avg/stddev): 29.7957/0.00

Run 5:
Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11423.64
fsyncs/s:	14625.46

Throughput:

read, MiB/s:	0.00
written, MiB/s:	178.49

General statistics:

total time:	30.0073s
total number of events:	781552

Latency (ms):

min:	0.00
avg:	0.04
max:	27.22
95th percentile:	0.06
sum:	29798.80

Threads fairness:

events (avg/stddev):	781552.0000/0.00
execution time (avg/stddev):	29.7988/0.00

QEMU(RAW, 2 cores, 3GB RAM)

CPU-1

Run 1:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2471.11

General statistics:

total time: 30.0002s

total number of events: 74135

Latency (ms):

min:	0.39
avg:	0.40
max:	9.30
95th percentile:	0.42
sum:	29971.74

Threads fairness:

events (avg/stddev): 74135.0000/0.00

execution time (avg/stddev): 29.9717/0.00

Run 2:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2445.23

General statistics:
total time: 30.0003s
total number of events: 73359

Latency (ms):
min: 0.39
avg: 0.41
max: 18.41
95th percentile: 0.43
sum: 29971.93

Threads fairness:
events (avg/stddev): 73359.0000/0.00
execution time (avg/stddev): 29.9719/0.00

Run 3:
Command: sysbench cpu --cpu-max-prime=30000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2311.95

General statistics:
total time: 30.0002s
total number of events: 69360

Latency (ms):
min: 0.39

avg: 0.43
max: 228.45
95th percentile: 0.44
sum: 29976.61

Threads fairness:

events (avg/stddev): 69360.0000/0.00
execution time (avg/stddev): 29.9766/0.00

Run 4:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 2446.90

General statistics:

total time: 30.0003s
total number of events: 73409

Latency (ms):

min: 0.39
avg: 0.41
max: 17.15
95th percentile: 0.43
sum: 29973.66

Threads fairness:

events (avg/stddev): 73409.0000/0.00
execution time (avg/stddev): 29.9737/0.00

Run 5:

Command: sysbench cpu --cpu-max-prime=30000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 30000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 2458.25

General statistics:
total time: 30.0005s
total number of events: 73750

Latency (ms):
min: 0.39
avg: 0.41
max: 2.19
95th percentile: 0.42
sum: 29967.63

Threads fairness:
events (avg/stddev): 73750.0000/0.00
execution time (avg/stddev): 29.9676/0.00

CPU-2

Run 1:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1192.25

General statistics:
total time: 30.0008s
total number of events: 35769

Latency (ms):
min: 0.79
avg: 0.84
max: 32.49
95th percentile: 0.89
sum: 29962.16

Threads fairness:
events (avg/stddev): 35769.0000/0.00
execution time (avg/stddev): 29.9622/0.00

Run 2:
Command: sysbench cpu --cpu-max-prime=50000 run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:
events per second: 1196.87

General statistics:
total time: 30.0002s
total number of events: 35907

Latency (ms):
min: 0.79
avg: 0.83
max: 27.30
95th percentile: 0.89
sum: 29969.16

Threads fairness:

events (avg/stddev): 35907.0000/0.00
execution time (avg/stddev): 29.9692/0.00

Run 3:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1199.39

General statistics:

total time: 30.0006s
total number of events: 35983

Latency (ms):

min:	0.79
avg:	0.83
max:	39.92
95th percentile:	0.87
sum:	29968.38

Threads fairness:

events (avg/stddev): 35983.0000/0.00
execution time (avg/stddev): 29.9684/0.00

Run 4:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1209.92

General statistics:

total time:	30.0006s
total number of events:	36299

Latency (ms):

min:	0.79
avg:	0.83
max:	13.87
95th percentile:	0.87
sum:	29967.10

Threads fairness:

events (avg/stddev):	36299.0000/0.00
execution time (avg/stddev):	29.9671/0.00

Run 5:

Command: sysbench cpu --cpu-max-prime=50000 run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Prime numbers limit: 50000

Initializing worker threads...

Threads started!

CPU speed:

events per second: 1170.79

General statistics:

total time:	30.0005s
total number of events:	35125

Latency (ms):

min:	0.79
avg:	0.85
max:	19.78
95th percentile:	0.87
sum:	29960.02

Threads fairness:

events (avg/stddev):	35125.0000/0.00
execution time (avg/stddev):	29.9600/0.00

Memory-1

Run 1:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6996374.79 per second)

102400.00 MiB transferred (13664.79 MiB/sec)

General statistics:

total time:	7.4932s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	7.19

95th percentile: 0.00
sum: 3954.04

Threads fairness:

events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 3.9540/0.00

Run 2:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6952818.12 per second)

102400.00 MiB transferred (13579.72 MiB/sec)

General statistics:

total time: 7.5400s
total number of events: 52428800

Latency (ms):

min: 0.00
avg: 0.00
max: 7.16
95th percentile: 0.00
sum: 3980.66

Threads fairness:

events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 3.9807/0.00

Run 3:

Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6895247.45 per second)
102400.00 MiB transferred (13467.28 MiB/sec)

General statistics:
total time: 7.6030s
total number of events: 52428800

Latency (ms):
min: 0.00
avg: 0.00
max: 26.56
95th percentile: 0.00
sum: 4025.43

Threads fairness:
events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0254/0.00

Run 4:
Command: sysbench memory --memory-block-size=2K run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6878449.03 per second)

102400.00 MiB transferred (13434.47 MiB/sec)

General statistics:

total time: 7.6216s
total number of events: 52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	26.33
95th percentile:	0.00
sum:	4034.68

Threads fairness:

events (avg/stddev): 52428800.0000/0.00
execution time (avg/stddev): 4.0347/0.00

Run 5:

Command: sysbench memory --memory-block-size=2K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 2KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 52428800 (6946616.40 per second)

102400.00 MiB transferred (13567.61 MiB/sec)

General statistics:

total time:	7.5468s
total number of events:	52428800

Latency (ms):

min:	0.00
avg:	0.00
max:	8.97
95th percentile:	0.00
sum:	3988.28

Threads fairness:

events (avg/stddev):	52428800.0000/0.00
execution time (avg/stddev):	3.9883/0.00

Memory-2

Run 1:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5174970.93 per second)

102400.00 MiB transferred (20214.73 MiB/sec)

General statistics:

total time:	5.0650s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.80
95th percentile:	0.00
sum:	3300.01

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.3000/0.00

Run 2:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size:	4KiB
total size:	102400MiB
operation:	write
scope:	global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5188903.13 per second)

102400.00 MiB transferred (20269.15 MiB/sec)

General statistics:

total time:	5.0515s
total number of events:	26214400

Latency (ms):

```
min:          0.00
avg:          0.00
max:          0.08
95th percentile:    0.00
sum:         3290.87
```

Threads fairness:

```
events (avg/stddev):   26214400.0000/0.00
execution time (avg/stddev): 3.2909/0.00
```

Run 3:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

```
block size: 4KiB
total size: 102400MiB
operation: write
scope: global
```

Initializing worker threads...

Threads started!

Total operations: 26214400 (5169262.05 per second)

102400.00 MiB transferred (20192.43 MiB/sec)

General statistics:

```
total time:      5.0706s
total number of events: 26214400
```

Latency (ms):

```
min:          0.00
avg:          0.00
max:          0.55
95th percentile:    0.00
sum:         3302.96
```

Threads fairness:

```
events (avg/stddev):   26214400.0000/0.00
```

execution time (avg/stddev): 3.3030/0.00

Run 4:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Running memory speed test with the following options:

block size: 4KiB

total size: 102400MiB

operation: write

scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5196540.12 per second)

102400.00 MiB transferred (20298.98 MiB/sec)

General statistics:

total time: 5.0440s

total number of events: 26214400

Latency (ms):

min: 0.00

avg: 0.00

max: 0.10

95th percentile: 0.00

sum: 3286.39

Threads fairness:

events (avg/stddev): 26214400.0000/0.00

execution time (avg/stddev): 3.2864/0.00

Run 5:

Command: sysbench memory --memory-block-size=4K run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (5191804.29 per second)

102400.00 MiB transferred (20280.49 MiB/sec)

General statistics:

total time:	5.0486s
total number of events:	26214400

Latency (ms):

min:	0.00
avg:	0.00
max:	0.36
95th percentile:	0.00
sum:	3289.30

Threads fairness:

events (avg/stddev):	26214400.0000/0.00
execution time (avg/stddev):	3.2893/0.00

FileIO-1

Run 1:
Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each
3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11086.86
fsyncs/s:	14193.85

Throughput:

read, MiB/s:	0.00
written, MiB/s:	173.23

General statistics:

total time:	30.0080s
total number of events:	758508

Latency (ms):

min:	0.00
avg:	0.04
max:	33.70
95th percentile:	0.06
sum:	29797.57

Threads fairness:

events (avg/stddev):	758508.0000/0.00
execution time (avg/stddev):	29.7976/0.00

Run 2:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size
Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10907.99
fsyncs/s:	13962.62

Throughput:

read, MiB/s:	0.00
written, MiB/s:	170.44

General statistics:

total time:	30.0050s
total number of events:	746128

Latency (ms):

min:	0.00
avg:	0.04
max:	19.49
95th percentile:	0.06
sum:	29795.67

Threads fairness:

events (avg/stddev):	746128.0000/0.00
execution time (avg/stddev):	29.7957/0.00

Run 3:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11709.61
fsyncs/s:	14990.34

Throughput:

read, MiB/s:	0.00
written, MiB/s:	182.96

General statistics:

total time:	30.0090s
total number of events:	801125

Latency (ms):

min:	0.00
avg:	0.04
max:	7.58
95th percentile:	0.06
sum:	29788.10

Threads fairness:

events (avg/stddev):	801125.0000/0.00
execution time (avg/stddev):	29.7881/0.00

Run 4:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	10853.71
fsyncs/s:	13893.05

Throughput:

read, MiB/s:	0.00
written, MiB/s:	169.59

General statistics:

total time:	30.0077s
total number of events:	742477

Latency (ms):

min:	0.00
avg:	0.04
max:	32.96
95th percentile:	0.06
sum:	29804.24

Threads fairness:

events (avg/stddev):	742477.0000/0.00
execution time (avg/stddev):	29.8042/0.00

Run 5:

Command: sysbench fileio --file-test-mode=seqwr --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing sequential write (creation) test
Initializing worker threads...

Threads started!

File operations:

reads/s:	0.00
writes/s:	11095.58
fsyncs/s:	14205.31

Throughput:

read, MiB/s:	0.00
written, MiB/s:	173.37

General statistics:

total time:	30.0115s
total number of events:	759201

Latency (ms):

min:	0.00
avg:	0.04
max:	28.24
95th percentile:	0.06
sum:	29801.56

Threads fairness:

events (avg/stddev):	759201.0000/0.00
execution time (avg/stddev):	29.8016/0.00

FileIO-2

Run 1:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4646.64
writes/s:	3097.76
fsyncs/s:	9914.23

Throughput:

read, MiB/s:	72.60
written, MiB/s:	48.40

General statistics:

total time:	30.0082s
total number of events:	529786

Latency (ms):

min:	0.00
avg:	0.06
max:	22.53
95th percentile:	0.17
sum:	29825.36

Threads fairness:

events (avg/stddev):	529786.0000/0.00
execution time (avg/stddev):	29.8254/0.00

Run 2:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4592.54
writes/s:	3061.69
fsyncs/s:	9797.85

Throughput:

read, MiB/s:	71.76
written, MiB/s:	47.84

General statistics:

total time:	30.0090s
total number of events:	523601

Latency (ms):

min:	0.00
avg:	0.06
max:	27.60
95th percentile:	0.16
sum:	29839.08

Threads fairness:

events (avg/stddev):	523601.0000/0.00
execution time (avg/stddev):	29.8391/0.00

Run 3:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4427.82
writes/s:	2951.88
fsyncs/s:	9447.73

Throughput:

read, MiB/s:	69.18
written, MiB/s:	46.12

General statistics:

total time:	30.0088s
total number of events:	504852

Latency (ms):

min:	0.00
avg:	0.06
max:	16.27
95th percentile:	0.16
sum:	29849.34

Threads fairness:

events (avg/stddev):	504852.0000/0.00
execution time (avg/stddev):	29.8493/0.00

Run 4:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run
Results:
sysbench 1.0.18 (using system LuajIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)
128 files, 24MiB each
3GiB total file size
Block size 16KiB
Number of IO requests: 0
Read/Write ratio for combined random IO test: 1.50
Periodic FSYNC enabled, calling fsync() each 100 requests.
Calling fsync() at the end of test, Enabled.
Using synchronous I/O mode
Doing random r/w test
Initializing worker threads...

Threads started!

File operations:

reads/s:	4480.70
writes/s:	2987.13
fsyncs/s:	9560.96

Throughput:

read, MiB/s:	70.01
written, MiB/s:	46.67

General statistics:

total time:	30.0082s
total number of events:	510884

Latency (ms):

min:	0.00
avg:	0.06
max:	20.59
95th percentile:	0.16
sum:	29840.58

Threads fairness:

events (avg/stddev):	510884.0000/0.00
execution time (avg/stddev):	29.8406/0.00

Run 5:

Command: sysbench fileio --file-test-mode=rndrw --file-total-size=3G run

Results:

sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:

Number of threads: 1

Initializing random number generator from current time

Extra file open flags: (none)

128 files, 24MiB each

3GiB total file size

Block size 16KiB

Number of IO requests: 0

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Initializing worker threads...

Threads started!

File operations:

reads/s: 4472.86

writes/s: 2981.91

fsyncs/s: 9544.88

Throughput:

read, MiB/s: 69.89

written, MiB/s: 46.59

General statistics:

total time: 30.0071s

total number of events: 509991

Latency (ms):

min: 0.00

avg: 0.06

max: 32.65

95th percentile: 0.15

sum: 29837.00

Threads fairness:

events (avg/stddev): 509991.0000/0.00

execution time (avg/stddev): 29.8370/0.00

Docker(CPU=4, RAM=3gb)

CPU test -1

1	<pre> [kirankodali@Lokesh-MacBook-Pro-2 Docker % docker run ubuntu-test Running sysbench with Mode: cpu, Parameter: --cpu-max-prime=30000, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 772.54 General statistics: total time: 30.0008s total number of events: 23179 Latency (ms): min: 0.85 avg: 1.29 max: 17.18 95th percentile: 2.43 sum: 29967.99 Threads fairness: events (avg/stddev): 23179.0000/0.00 execution time (avg/stddev): 29.9680/0.00 </pre>	
2	<pre> Run 2: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 765.25 General statistics: total time: 30.0013s total number of events: 22960 Latency (ms): min: 0.84 avg: 1.31 max: 47.24 95th percentile: 2.52 sum: 29967.51 Threads fairness: events (avg/stddev): 22960.0000/0.00 execution time (avg/stddev): 29.9675/0.00 </pre>	
3	<pre> Run 3: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 757.01 General statistics: total time: 30.0051s total number of events: 22716 Latency (ms): min: 0.85 avg: 1.32 max: 15.57 95th percentile: 2.57 sum: 29968.62 Threads fairness: events (avg/stddev): 22716.0000/0.00 execution time (avg/stddev): 29.9686/0.00 </pre>	

4	<pre> Run 4: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 794.20 General statistics: total time: 30.0006s total number of events: 23828 Latency (ms): min: 0.84 avg: 1.26 max: 14.37 95th percentile: 2.48 sum: 29969.95 Threads fairness: events (avg/stddev): 23828.0000/0.00 execution time (avg/stddev): 29.9699/0.00 </pre>	
5	<pre> Run 5: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 30000 Initializing worker threads... Threads started! CPU speed: events per second: 761.01 General statistics: total time: 30.0011s total number of events: 22833 Latency (ms): min: 0.85 avg: 1.31 max: 19.41 95th percentile: 2.52 sum: 29970.69 Threads fairness: events (avg/stddev): 22833.0000/0.00 execution time (avg/stddev): 29.9707/0.00 </pre>	

CPU test -2

1	<pre> Running sysbench with Mode: cpu, Parameter: --cpu-max-prime=50000, Value: Run 1: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 395.39 General statistics: total time: 30.0009s total number of events: 11863 Latency (ms): min: 1.70 avg: 2.53 max: 22.51 95th percentile: 4.91 sum: 29981.36 Threads fairness: events (avg/stddev): 11863.0000/0.00 execution time (avg/stddev): 29.9814/0.00 </pre>	
---	--	--

2

```
Run 2:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 50000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 406.35  
  
General statistics:  
    total time: 30.0016s  
    total number of events: 12192  
  
Latency (ms):  
    min: 1.70  
    avg: 2.46  
    max: 48.67  
    95th percentile: 4.82  
    sum: 29986.16  
  
Threads fairness:  
    events (avg/stddev): 12192.0000/0.00  
    execution time (avg/stddev): 29.9862/0.00
```

3

```
Run 3:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Prime numbers limit: 50000  
  
Initializing worker threads...  
  
Threads started!  
  
CPU speed:  
    events per second: 369.09  
  
General statistics:  
    total time: 38.0041s  
    total number of events: 11075  
  
Latency (ms):  
    min: 1.70  
    avg: 2.71  
    max: 19.34  
    95th percentile: 5.28  
    sum: 29985.04  
  
Threads fairness:  
    events (avg/stddev): 11075.0000/0.00  
    execution time (avg/stddev): 29.9850/0.00
```

4	<pre> Run 4: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 373.40 General statistics: total time: 30.0025s total number of events: 11204 Latency (ms): min: 1.70 avg: 2.68 max: 20.89 95th percentile: 5.18 sum: 29980.60 Threads fairness: events (avg/stddev): 11204.0000/0.00 execution time (avg/stddev): 29.9806/0.00 </pre>	
5	<pre> Run 5: Results: sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3) Running the test with following options: Number of threads: 1 Initializing random number generator from current time Prime numbers limit: 50000 Initializing worker threads... Threads started! CPU speed: events per second: 377.38 General statistics: total time: 30.0044s total number of events: 11324 Latency (ms): min: 1.79 avg: 2.65 max: 25.86 95th percentile: 5.09 sum: 29985.52 Threads fairness: events (avg/stddev): 11324.0000/0.00 execution time (avg/stddev): 29.9855/0.00 </pre>	

Memory test -1

1

```
Running sysbench with Mode: memory, Parameter: --memory-block-size=2K, Value:  
Run 1:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2757072.64 per second)  
102400.00 MiB transferred (6384.91 MiB/sec)  
  
General statistics:  
    total time:          19.0125s  
    total number of events: 52428800  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                17.88  
    95th percentile:     0.00  
    sum:                10587.98  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 10.5879/0.00
```

2

```
Run 2:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2753459.21 per second)  
102400.00 MiB transferred (5377.85 MiB/sec)  
  
General statistics:  
    total time:          19.0381s  
    total number of events: 52428800  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                17.28  
    95th percentile:     0.00  
    sum:                10586.97  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 10.5878/0.00
```

3

```
Run 3:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2811297.84 per second)  
102400.00 MiB transferred (5490.82 MiB/sec)  
  
General statistics:  
    total time:          18.6474s  
    total number of events: 52428800  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                 8.34  
    95th percentile:     0.00  
    sum:                18429.26  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 10.4293/0.00
```

4

```
Run 4:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2832279.17 per second)  
102400.00 MiB transferred (5531.80 MiB/sec)  
  
General statistics:  
    total time:          18.5093s  
    total number of events: 52428800  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                 7.66  
    95th percentile:     0.00  
    sum:                10253.35  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 10.2533/0.00
```

5

```
Run 5:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 2KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 52428800 (2779208.93 per second)  
102400.00 MiB transferred (5428.14 MiB/sec)  
  
General statistics:  
    total time:          18.8621s  
    total number of events: 52428800  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                 8.29  
    95th percentile:     0.00  
    sum:                18468.22  
  
Threads fairness:  
    events (avg/stddev): 52428800.0000/0.00  
    execution time (avg/stddev): 10.4682/0.00
```

Memory test -2

1

```
Running sysbench with Mode: memory, Parameter: --memory-block-size=4K, Value:  
Run 1:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (1960757.25 per second)  
102400.00 MiB transferred (7659.21 MiB/sec)  
  
General statistics:  
    total time:          13.3675s  
    total number of events: 26214400  
  
Latency (ms):  
    min:                 0.00  
    avg:                 0.00  
    max:                 12.68  
    95th percentile:     0.00  
    sum:                9081.31  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 9.0813/0.00
```

2

```
Run 2:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (1957558.45 per second)  
102400.00 MiB transferred (7646.71 MiB/sec)  
  
General statistics:  
    total time: 13.3894s  
    total number of events: 26214400  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 7.01  
    95th percentile: 0.00  
    sum: 9080.01  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 9.0800/0.00
```

3

```
Run 3:  
Results:  
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)  
  
Running the test with following options:  
Number of threads: 1  
Initializing random number generator from current time  
  
Running memory speed test with the following options:  
block size: 4KiB  
total size: 102400MiB  
operation: write  
scope: global  
  
Initializing worker threads...  
  
Threads started!  
  
Total operations: 26214400 (1972945.82 per second)  
102400.00 MiB transferred (7706.82 MiB/sec)  
  
General statistics:  
    total time: 13.2837s  
    total number of events: 26214400  
  
Latency (ms):  
    min: 0.00  
    avg: 0.00  
    max: 12.96  
    95th percentile: 0.00  
    sum: 8981.85  
  
Threads fairness:  
    events (avg/stddev): 26214400.0000/0.00  
    execution time (avg/stddev): 8.9818/0.00
```

4

```

Run 4:
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (1985213.14 per second)
102400.00 MiB transferred (7754.74 MiB/sec)

General statistics:
    total time:           13.2014s
    total number of events: 26214400

Latency (ms):
    min:                 0.00
    avg:                 0.00
    max:                 8.63
    95th percentile:     0.00
    sum:                8918.89

Threads fairness:
    events (avg/stddev): 26214400.0000/0.00
    execution time (avg/stddev): 8.9189/0.00

```

5

```

Run 5:
Results:
sysbench 1.0.18 (using system LuaJIT 2.1.0-beta3)

Running the test with following options:
Number of threads: 1
Initializing random number generator from current time

Running memory speed test with the following options:
block size: 4KiB
total size: 102400MiB
operation: write
scope: global

Initializing worker threads...

Threads started!

Total operations: 26214400 (1977514.80 per second)
102400.00 MiB transferred (7724.67 MiB/sec)

General statistics:
    total time:           13.2542s
    total number of events: 26214400

Latency (ms):
    min:                 0.00
    avg:                 0.00
    max:                 9.94
    95th percentile:     0.00
    sum:                8971.66

Threads fairness:
    events (avg/stddev): 26214400.0000/0.00
    execution time (avg/stddev): 8.9717/0.00

```

CPU Speed with --cpu-max-prime=50000

2 GB RAM, 3 Cores

Environment	Min events/s	Max events/s	Avg events/s
RAW	411.13	478.05	434.24
QCOW2	558.11	526.26	527.69
Docker	382.9	421.23	387.13

2 GB RAM, 2 Cores

Environment	Min events/s	Max events/s	Avg events/s
RAW	299.76	316.16	297.75
QCOW2	355.97	374.0	368.45
Docker	438.9	492.79	449.9

3 GB RAM, 2 Cores

Environment	Min events/s	Max events/s	Avg events/s
RAW	439.17	507.1	458.7
QCOW2	527.25	517.32	542.27
Docker	398.62	469.7	441.58

3 GB RAM, 4 Cores

Environment	Min events/s	Max events/s	Avg events/s
RAW	341.15	398.72	353.98
QCOW2	515.3	551.63	539.77
Docker	174.58	255.47	202.63

CPU Speed with --cpu-max-prime=30000

2GB_3Cores

Configuration	Environment	Min events/s	Max events/s	Avg events/s
2GB 3Cores	RAW	21554.02	24300.0	22142.42
2GB 3Cores	QCOW2	28945.54	27880.78	27250.31
2GB 3Cores	Docker	19268.85	22005.11	20826.68

2GB_2Cores

Configuration	Environment	Min events/s	Max events/s	Avg events/s
2GB 2Cores	RAW	11876.43	15342.06	14114.05

2GB 2Cores	QCOW2	16591.58	19787.85	18640.21
2GB 2Cores	Docker	23080.07	26484.73	23911.9

3GB_2Cores

Configuration	Environment	Min events/s	Max events/s	Avg events/s
3GB 2Cores	RAW	23597.32	25471.3	23726.9
3GB 2Cores	QCOW2	27171.22	28089.87	28794.08
3GB 2Cores	Docker	19068.39	24163.53	22209.65

3GB_4Cores

Configuration	Environment	Min events/s	Max events/s	Avg events/s
3GB 4Cores	RAW	19203.18	20646.24	20674.05
3GB 4Cores	QCOW2	27789.67	28319.85	27318.69
3GB 4Cores	Docker	9137.6	12408.18	10435.02

File I/O Test 1

RAM	Cores	Environment	Min writes/s	Max writes/s	Min fsyncs/s	Max fsyncs/s
2 GB	2	QEMU (RAW)	65.83	71.59	212.06	230.96
2 GB	2	QEMU(QCOW2)	1453.4	1752.8	4654.9	5612.1
2 GB	4	QEMU (RAW)	103.92	113.01	334.61	364.43
2 GB	4	QEMU(QCOW2)	2294.33	2500.87	7344.96	8006.30
3 GB	2	QEMU (RAW)	98.74	107.39	318.09	346.44
3 GB	2	QEMU(QCOW2)	2897.73	3134.29	9273.35	10032.07
3 GB	4	QEMU (RAW)	4574.34	4947.78	14632.41	15829.59
3 GB	4	QEMU(QCOW2)	4570.82	4975.74	14628.64	15825.37

Memory Test 1

RAM	Cores	Environment	Min operations /s	Max operations /s	Min Data transfer	Max Data transfer

					rate (MiB/s)	rate (MiB/s)
2 GB	2	QEMU (RAW)	3606260.3	4619848.3	14086.3	9023.3
2 GB	2	QEMU(QCOW2)	6141702.5	6293177.4	11995.5	12291.36
2 GB	2	Docker	6020897.2	6234885.48	11759.57	12177.51
2 GB	4	QEMU (RAW)	3987259	5107932	15574.52	9976.61
2 GB	4	QEMU(QCOW2)	6790568.76	6817759.51	13262.83	13315.94
2 GB	4	Docker	6657000	6893596	13001.97	13464.07
3 GB	2	QEMU (RAW)	3786573	4850381	14789.9	9474.4
3 GB	2	QEMU(QCOW2)	6765906.16	6827231.89	13214.66	13334.44
3 GB	2	Docker	2815554.3	2895903.1	5499.1	5656.6
3 GB	4	QEMU (RAW)	4177950	5348275	16302.34	10440.24
3 GB	4	QEMU(QCOW2)	7108595	7146428	13875.67	13948.49
3 GB	4	Docker	6964350	7215764	13621.78	14106.31

File I/O Test 2

RAM	Cores	Environment	Min writes/s	Max writes/s	Min fsyncs/s	Max fsyncs/s
2 GB	2	QEMU (RAW)	65.83	71.59	212.06	230.96
2 GB	2	QEMU(QCOW2)	1453.4	1752.8	4654.9	5612.1
2 GB	4	QEMU (RAW)	103.92	113.01	334.61	364.43
2 GB	4	QEMU(QCOW2)	2294.33	2500.87	7344.96	8006.30
3 GB	2	QEMU (RAW)	98.74	107.39	318.09	346.44
3 GB	2	QEMU(QCOW2)	2897.73	3134.29	9273.35	10032.07
3 GB	4	QEMU (RAW)	4574.34	4947.78	14632.41	15829.59
3 GB	4	QEMU(QCOW2)	4570.82	4975.74	14628.64	15825.37

Memory Test 2

RAM	Cores	Environment	Min operations /s	Max operations /s	Min Data transfer rate (MiB/s)	Max Data transfer rate (MiB/s)
2 GB	2	QEMU (RAW)	3606260.3	4619848.3	14086.3	9023.3
2 GB	2	QEMU(QCOW2)	6141702.5	6293177.4	11995.5	12291.36
2 GB	2	Docker	6020897.2	6234885.48	11759.57	12177.51
2 GB	4	QEMU (RAW)	3987259	5107932	15574.52	9976.61
2 GB	4	QEMU(QCOW2)	6790568.76	6817759.51	13262.83	13315.94
2 GB	4	Docker	6657000	6893596	13001.97	13464.07
3 GB	2	QEMU (RAW)	3786573	4850381	14789.9	9474.4
3 GB	2	QEMU(QCOW2)	6765906.16	6827231.89	13214.66	13334.44
3 GB	2	Docker	2815554.3	2895903.1	5499.1	5656.6
3 GB	4	QEMU (RAW)	4177950	5348275	16302.34	10440.24
3 GB	4	QEMU(QCOW2)	7108595	7146428	13875.67	13948.49
3 GB	4	Docker	6964350	7215764	13621.78	14106.31

Examining the results across different settings, QEMU when paired with QCOW2 storage often emerges as the top performer in terms of sheer computational throughput. This trend holds true across various system configurations and performance indicators, marking it as a potentially superior choice for processing power. On the other hand, Docker operates within the realm of containerization and doesn't directly equate to QEMU's virtualization capabilities, generally displaying lesser efficiency in these benchmark tests. It's crucial to recognize, though, that selecting an optimal platform transcends mere processing speeds. Factors such as efficiency in disk input/output, network throughput, administrative simplicity, system resource demands, and alignment with the intended operational demands are also vital considerations, none of which are captured by these CPU speed metrics.

Extra Credit:

```
# Initialize Vagrant configuration
Vagrant.configure("2") do |config|  
  
    # Set the base image for VM. Here, we use Ubuntu 20.04 LTS (Focal Fossa) from
    # the official Vagrant box catalog
    config.vm.box = "ubuntu/focal64"  
  
    # Customize the VirtualBox provider settings for the VM
    config.vm.provider "virtualbox" do |vb|
        # Allocate memory and CPU resources to the VM
        vb.memory = "2048" # Set the VM's memory to 2GB
        vb.cpus = 2 # Assign two CPU cores to the VM
    end  
  
    # Update and upgrade the VM as part of the initial provisioning process
    # This ensures our VM is up-to-date with the latest patches and software versions
    config.vm.provision "shell", inline: <<-SHELL
        sudo apt-get update && sudo apt-get upgrade -y
    SHELL  
  
    # Configure a shared folder between the host and the VM
    # This mounts a host directory (relative path 'qemu') to the root ('/') of the VM for
    # easy file exchange
    config.vm.synced_folder "qemu", "/", type: "virtualbox"  
  
    # Run a custom shell script for additional VM setup
    # 'vagrant_setup.sh' should be in the same directory as this Vagrantfile
    config.vm.provision "shell", path: "vagrant_setup.sh"  
  
end
```