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amd-ionos

KVM testing on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

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Processor: 4 x AMD Opteron 62xx class (4 Cores), Motherboard: QEMU Standard PC (i440FX + PIIX 1996) (1.12.0-1 BIOS), Chipset: Intel 440FX 82441FX PMC, Memory: 1 x 8192 MB RAM QEMU, Disk: 50GB, Graphics: Red Hat QXL paravirtual graphic card, Network: Red Hat Virtio device

OS: Ubuntu 20.04, Kernel: 5.4.0-52-generic (x86_64), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale-gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,hsa --enable-plugin

```
--enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686
--with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: CPU Microcode: 0x1000065
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mdns: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and
seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP:
disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected
```

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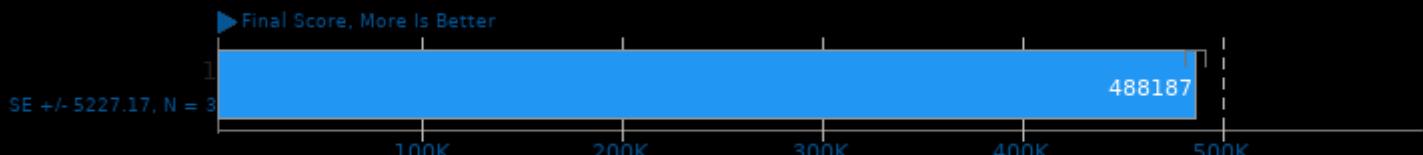
3

BlogBench - Read (Final Score)	488187
Standard Deviation	1.9%
BlogBench - Write (Final Score)	2697
Standard Deviation	6.8%
ebizzy (Records/s)	16650
Standard Deviation	1.2%
KeyDB (Ops/sec)	89290
Standard Deviation	0.6%
Memtier_benchmark - Redis (Ops/sec)	922742
Standard Deviation	2.2%
Redis - LPOP (Reqs/sec)	959095
Standard Deviation	2.4%
Redis - SADD (Reqs/sec)	818360
Standard Deviation	2.3%
Redis - LPUSH (Reqs/sec)	539560
Standard Deviation	3.9%
Redis - GET (Reqs/sec)	910413
Standard Deviation	2.3%
Redis - SET (Reqs/sec)	717378
Standard Deviation	2.5%
Apache Cassandra - Writes (Op/s)	5370
Standard Deviation	0.7%
Apache Cassandra - Mixed 1:1 (Op/s)	4723
Standard Deviation	4.4%
Apache Cassandra - Mixed 1:3 (Op/s)	4583
Standard Deviation	0.4%
Facebook RocksDB - Rand Fill (Op/s)	194040
Standard Deviation	0.8%
Facebook RocksDB - Rand Read (Op/s)	9363833
Standard Deviation	1.3%
Facebook RocksDB - Seq Fill (Op/s)	223336
Standard Deviation	0.9%
Facebook RocksDB - Rand Fill Sync (Op/s)	1560
Standard Deviation	0.2%
Facebook RocksDB - Read While Writing (Op/s)	262968
Standard Deviation	1.8%
NGINX Benchmark - S.W.P.S (Reqs/sec)	11636
Normalized	100%
Standard Deviation	1.9%
PostgreSQL pgbench - 100 - 100 - Read Only (TPS)	31243
Standard Deviation	1.9%

PostgreSQL pgbench - 100 - 100 - Read Only -	3.203
Average Latency (ms)	
Standard Deviation	1.9%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	28281
Standard Deviation	2.4%
PostgreSQL pgbench - 100 - 250 - Read Only -	8.848
Average Latency (ms)	
Standard Deviation	2.5%
PostgreSQL pgbench - 100 - 100 - Read Write (TPS)	3373
Standard Deviation	0.7%
PostgreSQL pgbench - 100 - 100 - Read Write -	29.655
Average Latency (ms)	
Standard Deviation	0.7%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	3084
Standard Deviation	1.9%
PostgreSQL pgbench - 100 - 250 - Read Write -	81.114
Average Latency (ms)	
Standard Deviation	1.8%
PostgreSQL pgbench - 1000 - 100 - Read Only (TPS)	2345
Standard Deviation	0.7%
PostgreSQL pgbench - 1000 - 100 - Read Only -	42.660
Average Latency (ms)	
Standard Deviation	0.7%
PostgreSQL pgbench - 1000 - 250 - Read Only (TPS)	2349
Standard Deviation	0.4%
PostgreSQL pgbench - 1000 - 250 - Read Only -	106.458
Average Latency (ms)	
Standard Deviation	0.4%
PostgreSQL pgbench - 1000 - 100 - Read Write (TPS)	2346
Standard Deviation	0.6%
PostgreSQL pgbench - 1000 - 100 - Read Write -	42.636
Average Latency (ms)	
Standard Deviation	0.6%
PostgreSQL pgbench - 1000 - 250 - Read Write (TPS)	2327
Standard Deviation	0.2%
PostgreSQL pgbench - 1000 - 250 - Read Write -	107.470
Average Latency (ms)	
Standard Deviation	0.2%

BlogBench 1.1

Test: Read



1. (CC) gcc options: -O2 -pthread

BlogBench 1.1

Test: Write



1. (CC) gcc options: -O2 -pthread

ebizzy 0.3



1. (CC) gcc options: -pthread -lpthread -O3 -march=native

KeyDB 6.0.16



1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre

Memtier_benchmark 1.2.17

Protocol: Redis



1. (CXX) g++ options: -O2 -levent -lpthread -lz -lpcre

Redis 6.0.9

Test: LPOP



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

Test: SADD



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

Test: LPUSH



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

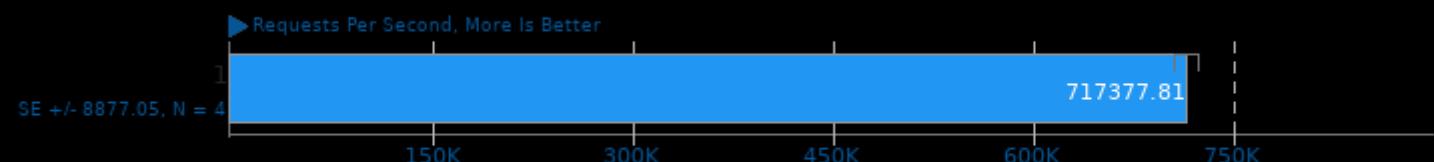
Test: GET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

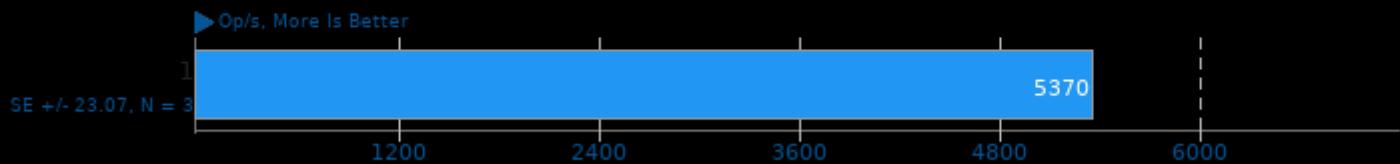
Test: SET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Apache Cassandra 3.11.4

Test: Writes



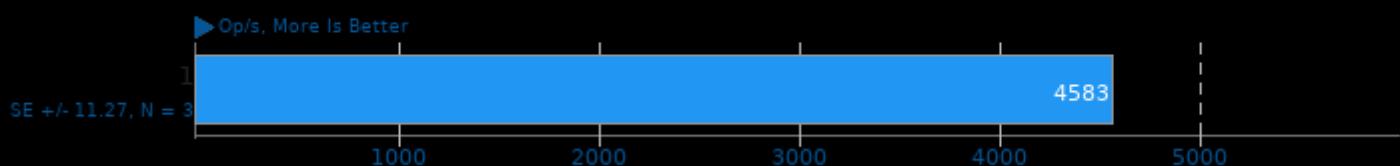
Apache Cassandra 3.11.4

Test: Mixed 1:1



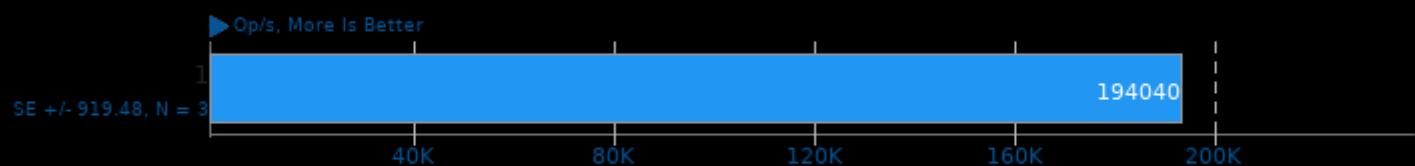
Apache Cassandra 3.11.4

Test: Mixed 1:3



Facebook RocksDB 6.3.6

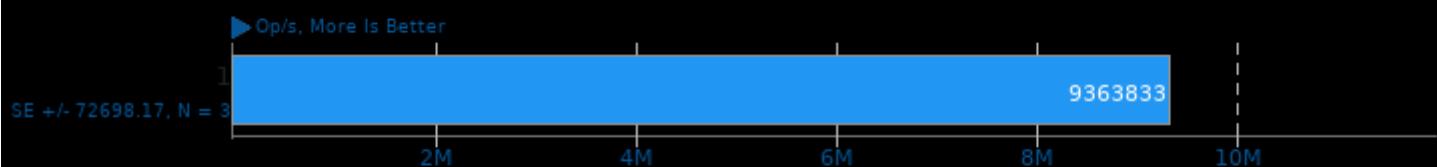
Test: Random Fill



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-built-in-memcmp -fno-rtti -rdynamic -lpthread

Facebook RocksDB 6.3.6

Test: Random Read



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-built-in-memcmp -fno-rtti -rdynamic -lpthread

Facebook RocksDB 6.3.6

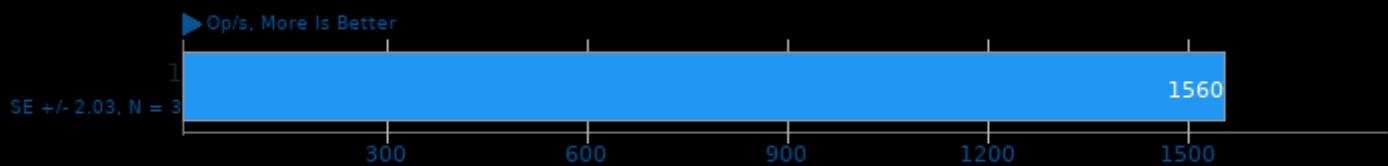
Test: Sequential Fill



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-built-in-memcmp -fno-rtti -rdynamic -lpthread

Facebook RocksDB 6.3.6

Test: Random Fill Sync



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-built-in-memcmp -fno-rtti -rdynamic -lpthread

Facebook RocksDB 6.3.6

Test: Read While Writing



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-built-in-memcmp -fno-rtti -rdynamic -lpthread

NGINX Benchmark 1.9.9

Static Web Page Serving



1. (CC) gcc options: -lpthread -lcrypt -lcrypto -lz -O3 -march=native

PostgreSQL pgbench 13.0

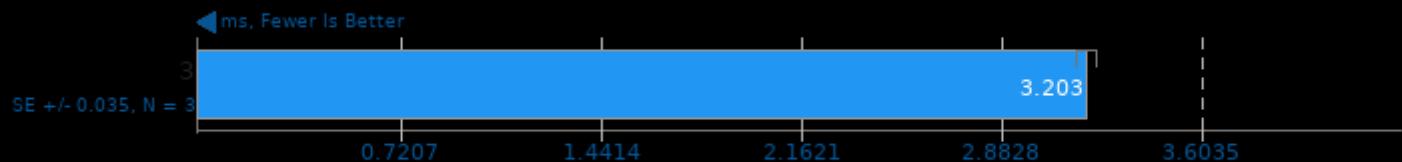
Scaling Factor: 100 - Clients: 100 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 100 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

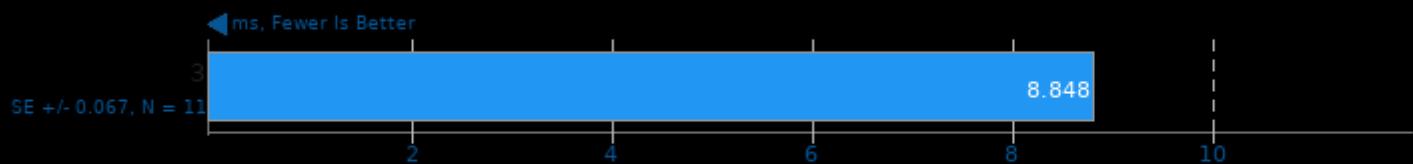
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

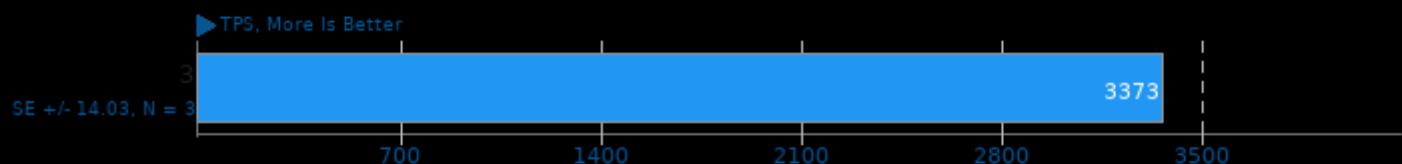
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 100 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

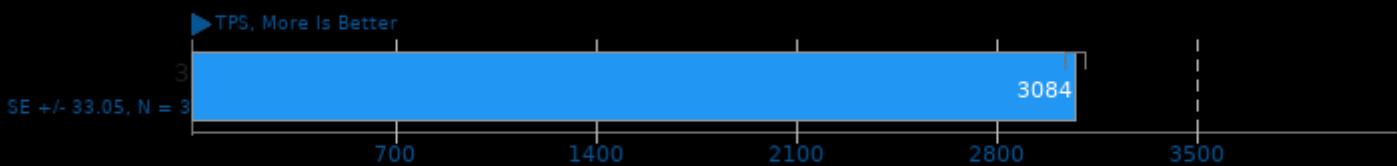
Scaling Factor: 100 - Clients: 100 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 250 - Mode: Read Write



PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 100 - Mode: Read Only



PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 100 - Mode: Read Only - Average Latency



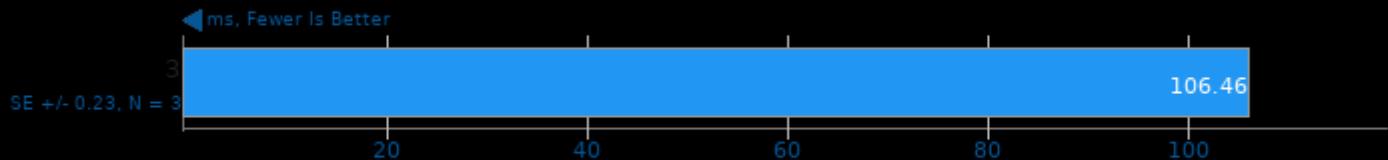
PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 250 - Mode: Read Only



PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 100 - Mode: Read Write



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PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 100 - Mode: Read Write - Average Latency



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PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 250 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 1000 - Clients: 250 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpq -pthread -lrt -ldl -lm

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024

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