



## cockroach ryzen amd

AMD Ryzen 9 5900HX testing with a ASUS G513QY v1.0 (G513QY.318 BIOS) and ASUS AMD Cezanne 512MB on Ubuntu 22.10 via the Phoronix Test Suite.

### Automated Executive Summary

*a had the most wins, coming in first place for 50% of the tests.*

*Based on the geometric mean of all complete results, the fastest (a) was 1.003x the speed of the slowest (b). c was 0.999x the speed of a and b was 0.998x the speed of c.*

*The results with the greatest spread from best to worst included:*

*CockroachDB (Workload: KV, 10% Reads - Concurrency: 128) at 1.019x*  
*CockroachDB (Workload: KV, 10% Reads - Concurrency: 512) at 1.013x*  
*CockroachDB (Workload: KV, 10% Reads - Concurrency: 256) at 1.012x*  
*CockroachDB (Workload: MoVR - Concurrency: 512) at 1.011x*  
*CockroachDB (Workload: MoVR - Concurrency: 128) at 1.008x*  
*CockroachDB (Workload: KV, 50% Reads - Concurrency: 128) at 1.008x*  
*CockroachDB (Workload: MoVR - Concurrency: 1024) at 1.006x*  
*CockroachDB (Workload: MoVR - Concurrency: 256) at 1.005x*  
*CockroachDB (Workload: KV, 50% Reads - Concurrency: 256) at 1x*

CockroachDB (Workload: KV, 50% Reads - Concurrency: 512) at 1x.

## Test Systems:

### a

Processor: AMD Ryzen 9 5900HX @ 4.89GHz (8 Cores / 16 Threads), Motherboard: ASUS G513QY v1.0 (G513QY.318 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZVLQ512HBLU-00B00, Graphics: ASUS AMD Cezanne 512MB (2500/1000MHz), Audio: AMD Navi 21/23, Monitor: LQ156M1JW25, Network: Realtek RTL8111/8168/8411 + MEDIATEK MT7921 802.11ax PCI

OS: Ubuntu 22.10, Kernel: 5.19.0-26-generic (x86\_64), Desktop: GNOME Shell 43.0, Display Server: X Server 1.21.1.4 + Wayland, OpenGL: 4.6 Mesa 22.2.1 (LLVM 15.0.2 DRM 3.47), Vulkan: 1.3.224, Compiler: GCC 12.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdc++-debug --enable-libstdc++-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-defaulted --enable-offload-targets=nvptx-none=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-nvptx/usr,amdgc-nv-none=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-gcn/usr --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-libstdc++-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: Scaling Governor: amd-pstate schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0xa50000c - ACPI Profile: balanced

Security Notes: itlb\_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio\_stale\_data: Not affected + retbleed: Not affected + spec\_store\_bypass: Mitigation of SSB disabled via prctl + spectre\_v1: Mitigation of usercopy/swaps barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Retpolines IBPB: conditional IBRS\_FW STIBP: always-on RSB filling PBRSE-IBRS: Not affected + srbds: Not affected + tsx\_async\_abort: Not affected

### b

Processor: AMD Ryzen 9 5900HX @ 4.89GHz (8 Cores / 16 Threads), Motherboard: ASUS G513QY v1.0 (G513QY.318 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZVLQ512HBLU-00B00, Graphics: ASUS AMD Cezanne 512MB, Audio: AMD Navi 21/23, Monitor: LQ156M1JW25, Network: Realtek RTL8111/8168/8411 + MEDIATEK MT7921 802.11ax PCI

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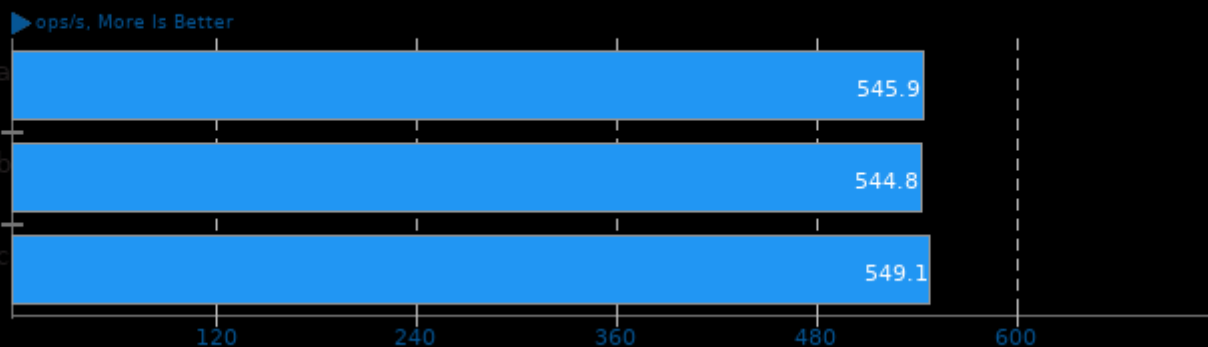
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	a	b	c
CockroachDB - MoVR - 128 (ops/s)	545.9	544.8	549.1
Normalized	99.42%	99.22%	100%
CockroachDB - MoVR - 256 (ops/s)	542.7	545.4	543.5
Normalized	99.5%	100%	99.65%
CockroachDB - MoVR - 512 (ops/s)	548.4	542.5	546.4
Normalized	100%	98.92%	99.64%
CockroachDB - MoVR - 1024 (ops/s)	545	541.9	544.9
Normalized	100%	99.43%	99.98%
CockroachDB - KV, 10% Reads - 128 (ops/s)	26885	26715	27226
Normalized	98.74%	98.12%	100%
CockroachDB - KV, 10% Reads - 256 (ops/s)	26545	26359	26240
Normalized	100%	99.3%	98.85%
CockroachDB - KV, 10% Reads - 512 (ops/s)	27017	27298	26938
Normalized	98.97%	100%	98.68%
CockroachDB - KV, 50% Reads - 128 (ops/s)	33905	33711	33651
Normalized	100%	99.43%	99.25%
CockroachDB - KV, 50% Reads - 256 (ops/s)	32554		
CockroachDB - KV, 50% Reads - 512 (ops/s)	30393		
CockroachDB - KV, 60% Reads - 128 (ops/s)	36585		
CockroachDB - KV, 60% Reads - 256 (ops/s)	33934		
CockroachDB - KV, 60% Reads - 512 (ops/s)	31769		
CockroachDB - KV, 95% Reads - 128 (ops/s)	44555		
CockroachDB - KV, 95% Reads - 256 (ops/s)	40726		
CockroachDB - KV, 95% Reads - 512 (ops/s)	36904		
CockroachDB - KV, 10% Reads - 1024 (ops/s)	24052		
CockroachDB - KV, 50% Reads - 1024 (ops/s)	26956		
CockroachDB - KV, 60% Reads - 1024 (ops/s)	28054		
CockroachDB - KV, 95% Reads - 1024 (ops/s)	32591		

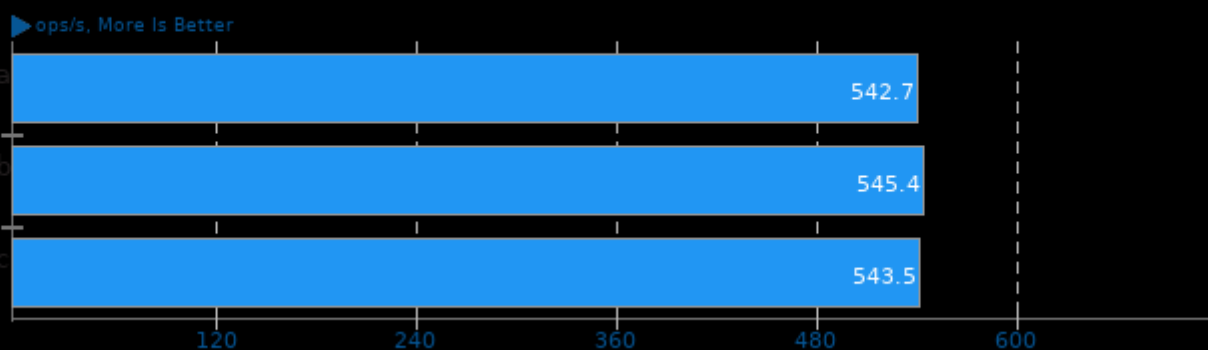
## CockroachDB 22.2

Workload: MoVR - Concurrency: 128



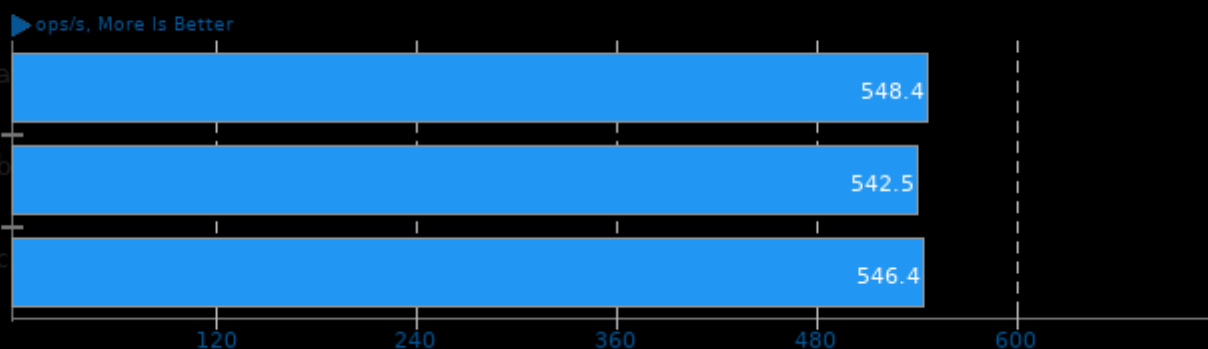
## CockroachDB 22.2

Workload: MoVR - Concurrency: 256



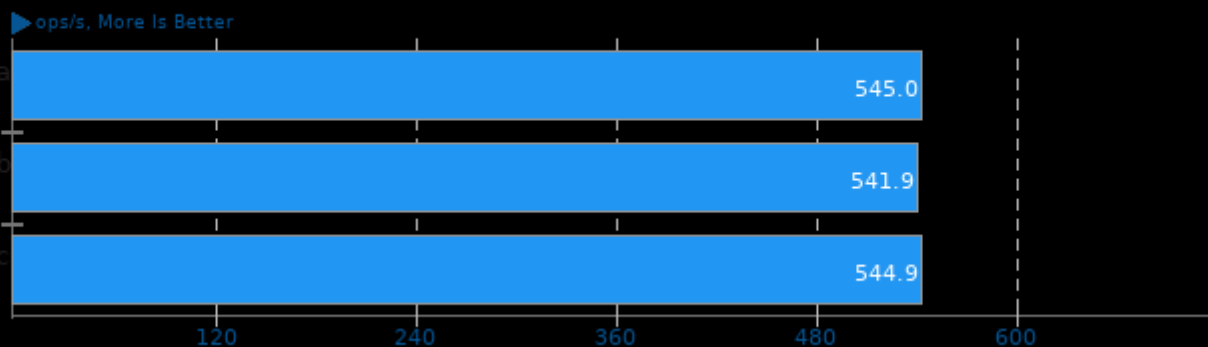
## CockroachDB 22.2

Workload: MoVR - Concurrency: 512



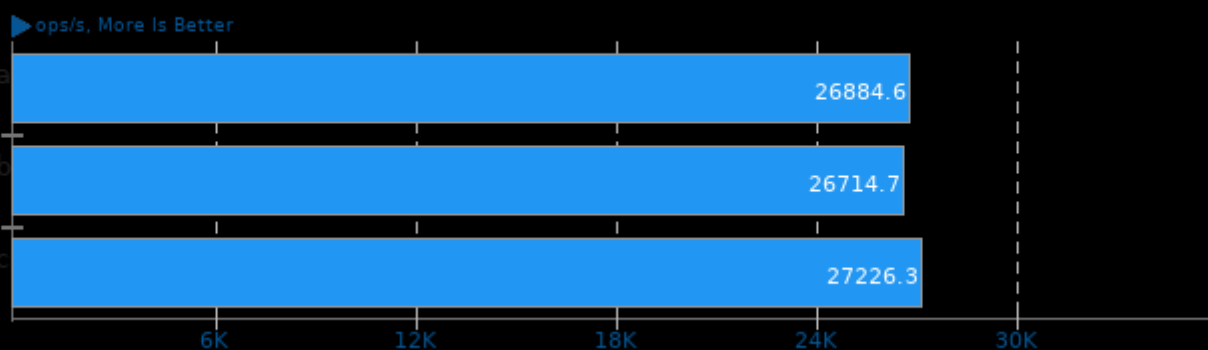
## CockroachDB 22.2

Workload: MoVR - Concurrency: 1024



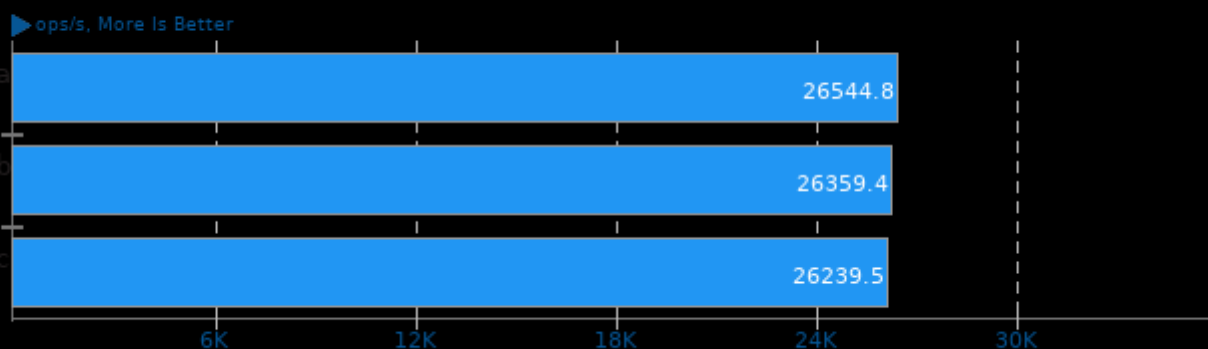
## CockroachDB 22.2

Workload: KV, 10% Reads - Concurrency: 128



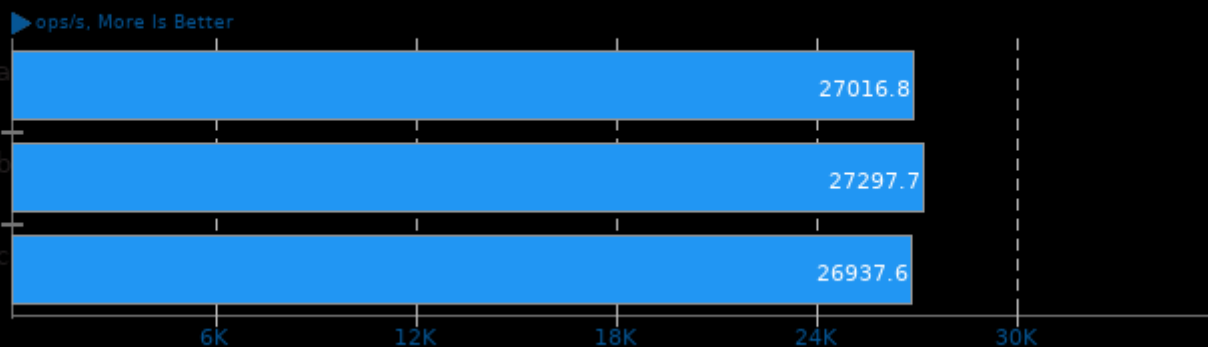
## CockroachDB 22.2

Workload: KV, 10% Reads - Concurrency: 256



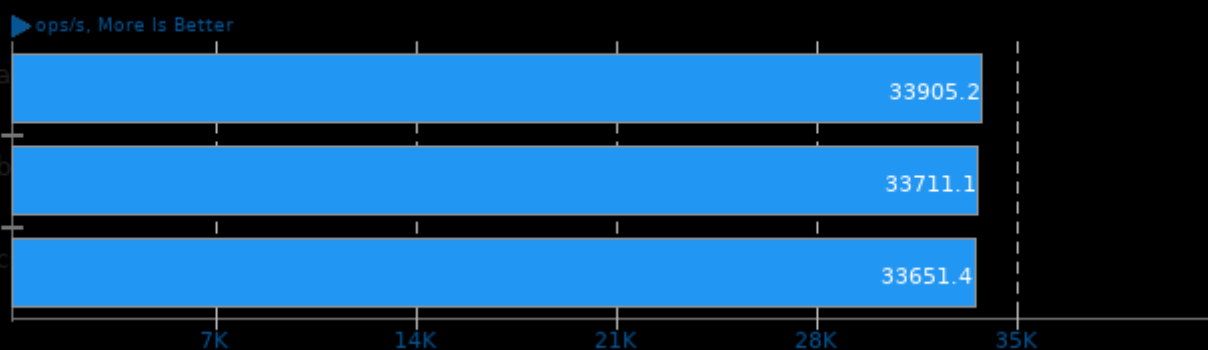
## CockroachDB 22.2

Workload: KV, 10% Reads - Concurrency: 512



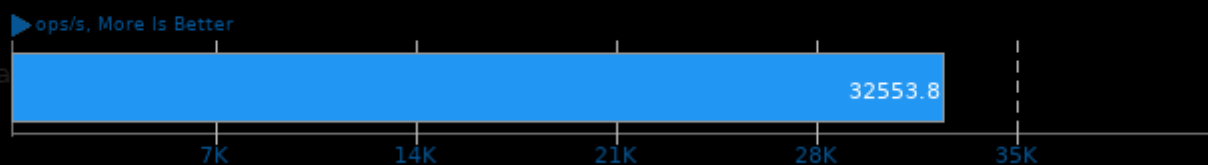
## CockroachDB 22.2

Workload: KV, 50% Reads - Concurrency: 128



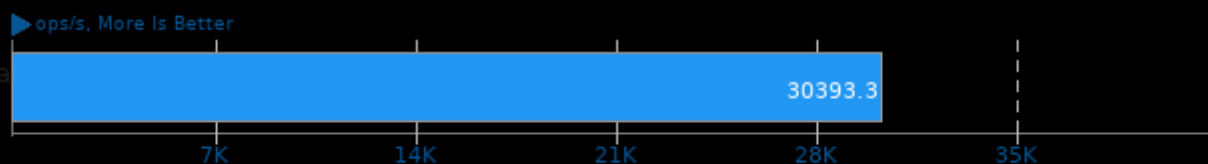
## CockroachDB 22.2

Workload: KV, 50% Reads - Concurrency: 256



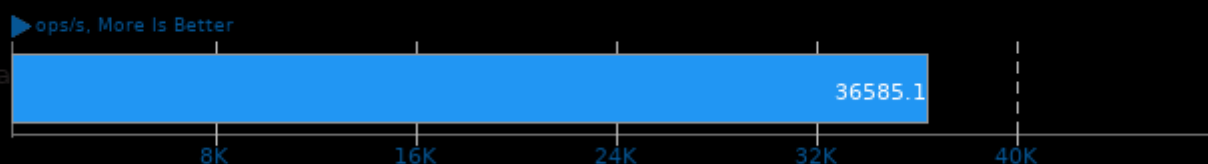
## CockroachDB 22.2

Workload: KV, 50% Reads - Concurrency: 512



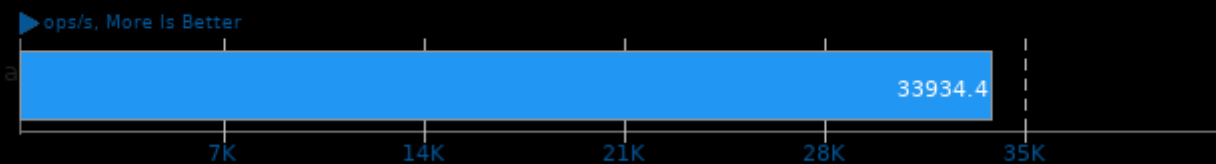
## CockroachDB 22.2

Workload: KV, 60% Reads - Concurrency: 128



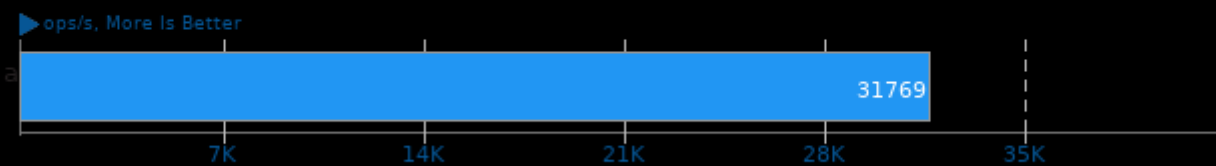
## CockroachDB 22.2

Workload: KV, 60% Reads - Concurrency: 256



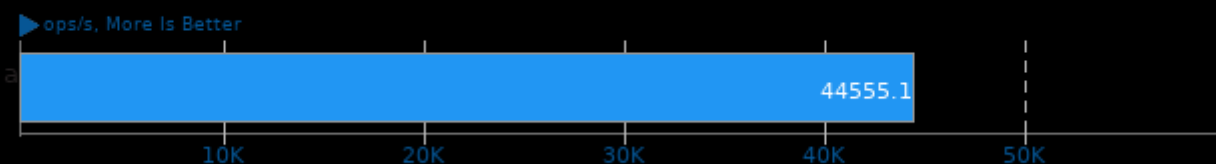
## CockroachDB 22.2

Workload: KV, 60% Reads - Concurrency: 512



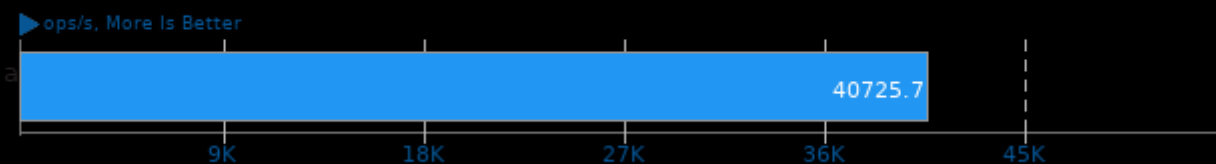
## CockroachDB 22.2

Workload: KV, 95% Reads - Concurrency: 128



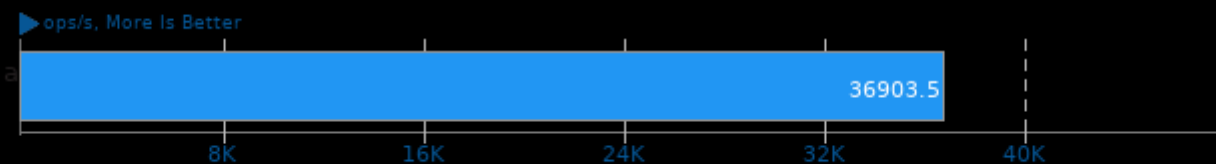
## CockroachDB 22.2

Workload: KV, 95% Reads - Concurrency: 256



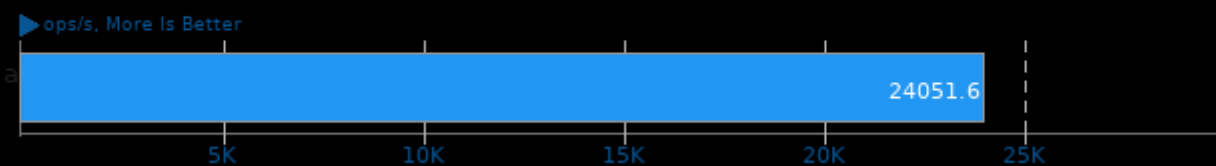
## CockroachDB 22.2

Workload: KV, 95% Reads - Concurrency: 512



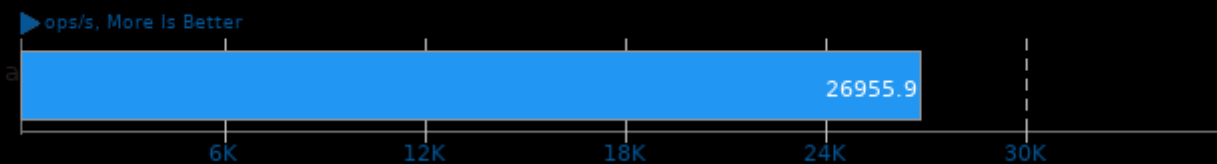
## CockroachDB 22.2

Workload: KV, 10% Reads - Concurrency: 1024



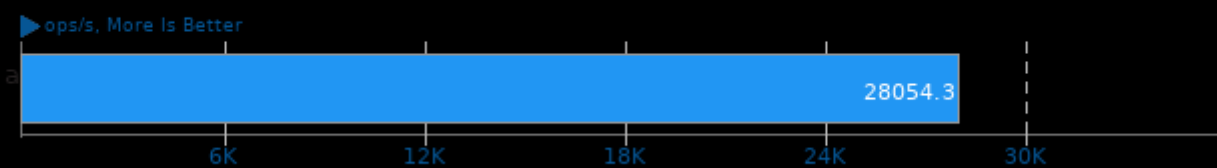
## CockroachDB 22.2

Workload: KV, 50% Reads - Concurrency: 1024



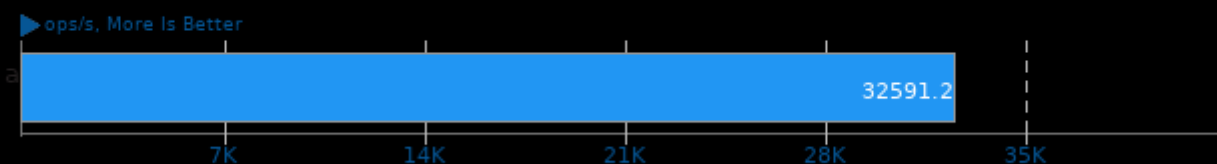
## CockroachDB 22.2

Workload: KV, 60% Reads - Concurrency: 1024



## CockroachDB 22.2

Workload: KV, 95% Reads - Concurrency: 1024



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