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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-libstdcxx-debug --enable-libstdcxx-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,amdgcn-amdhsa=/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-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: Scaling Governor: amd-pstate schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0xa50000c - ACPI Profile: balanced
Security Notes: itlb_multihit: Not affected + l1tf: 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/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-eIBRS: 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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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-libstdcxx-debug --enable-libstdcxx-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,amdgcn-amdhsa=/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-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: Scaling Governor: amd-pstate schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0xa50000c - ACPI Profile: balanced
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c

Processor: AMD Ryzen 9 5900HX @ 4.89GHz (8 Cores / 16 Threads), Motherboard: ASUS G513QY v1.0 (G513QY.318

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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

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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-libstdcxx-debug --enable-libstdcxx-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,amdgcn-amdhsa=/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-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
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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		

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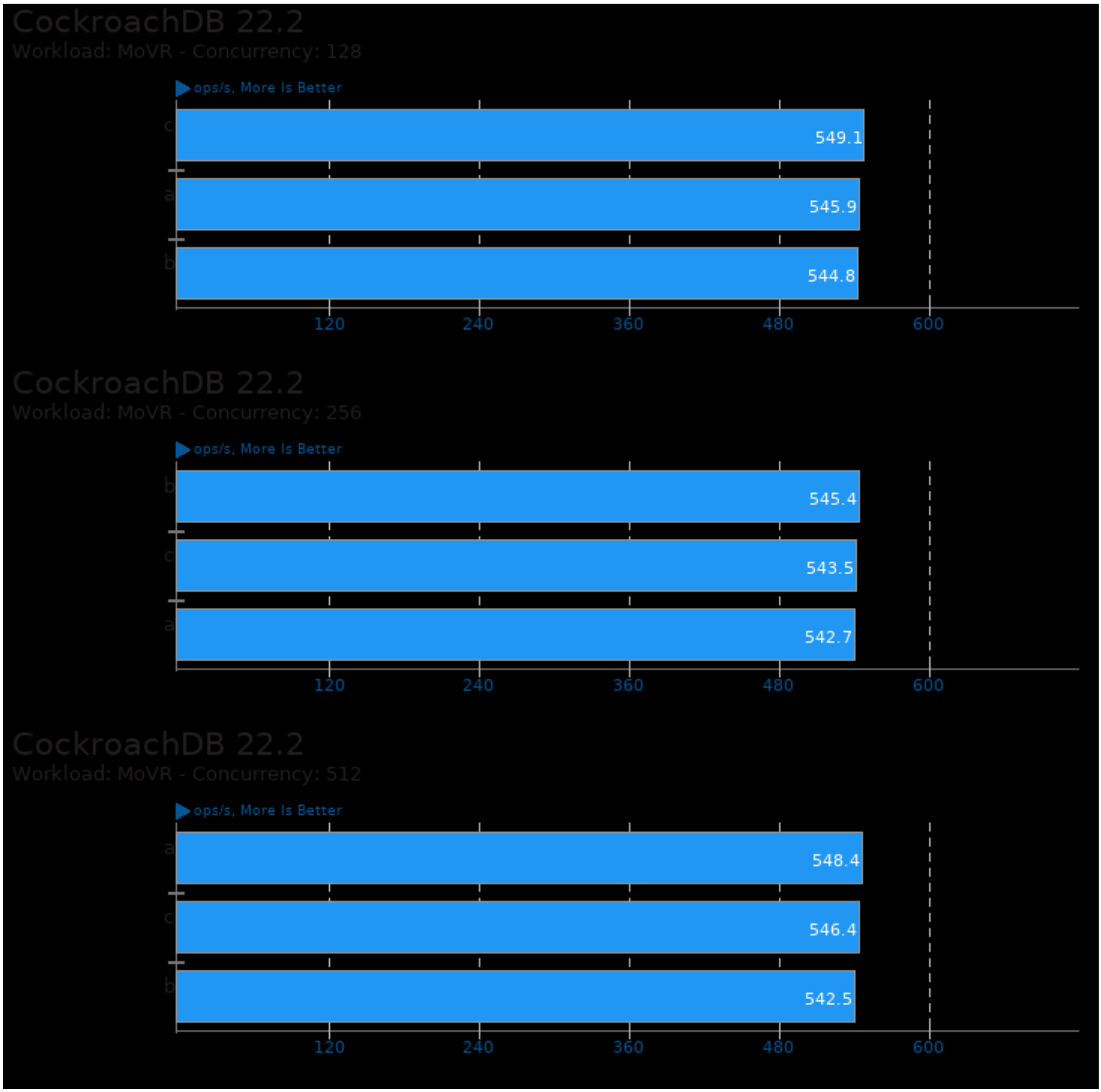

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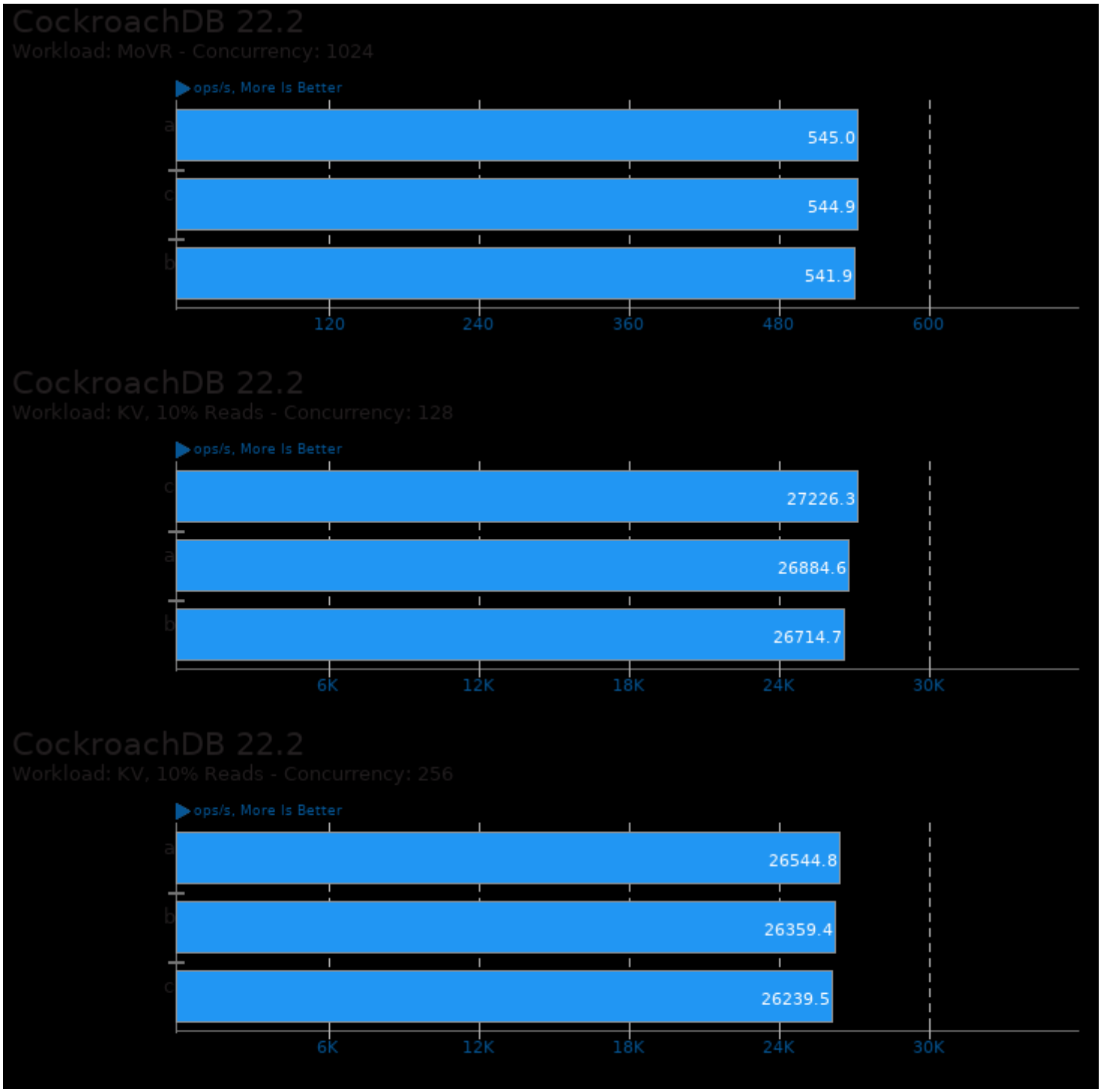

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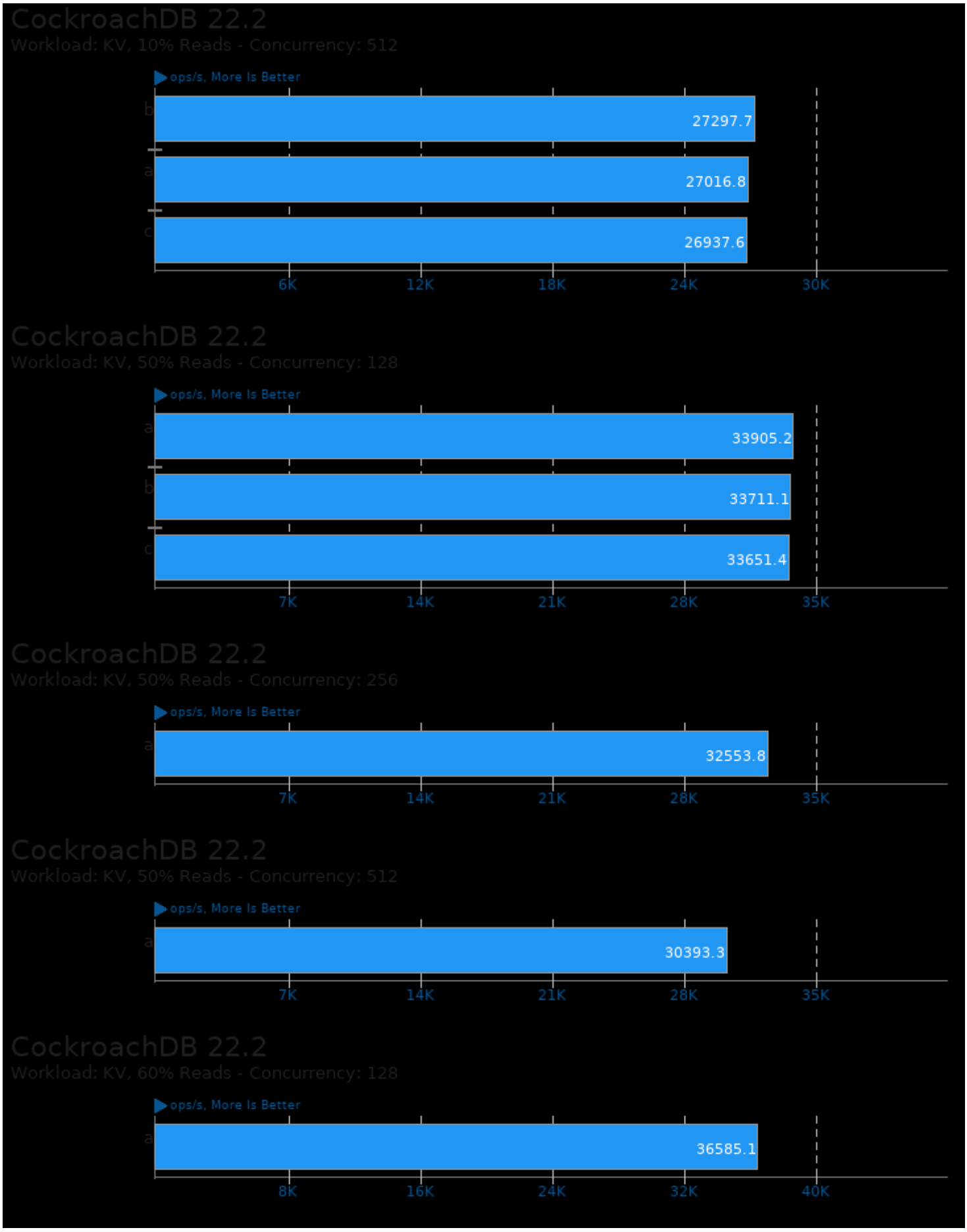

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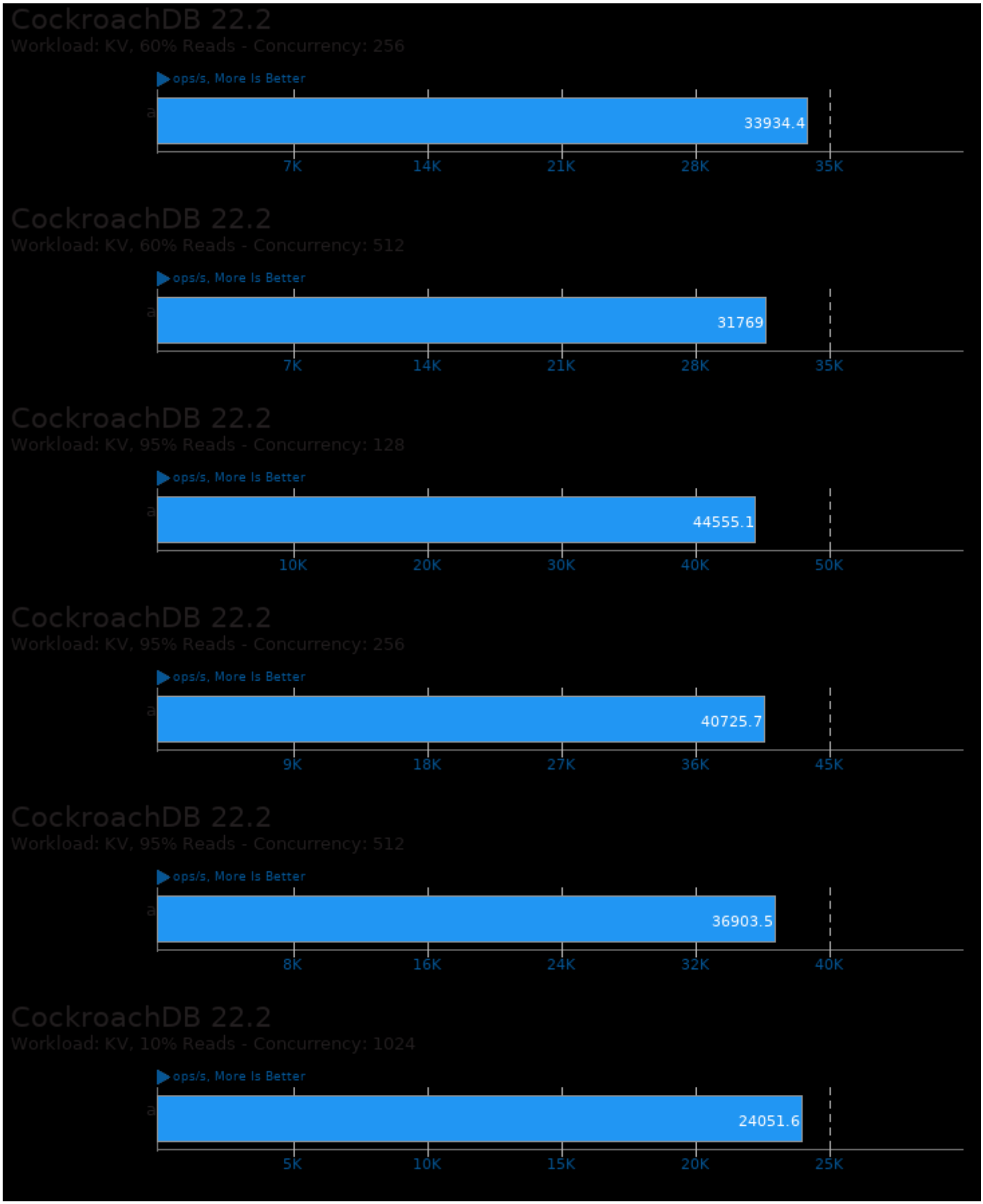

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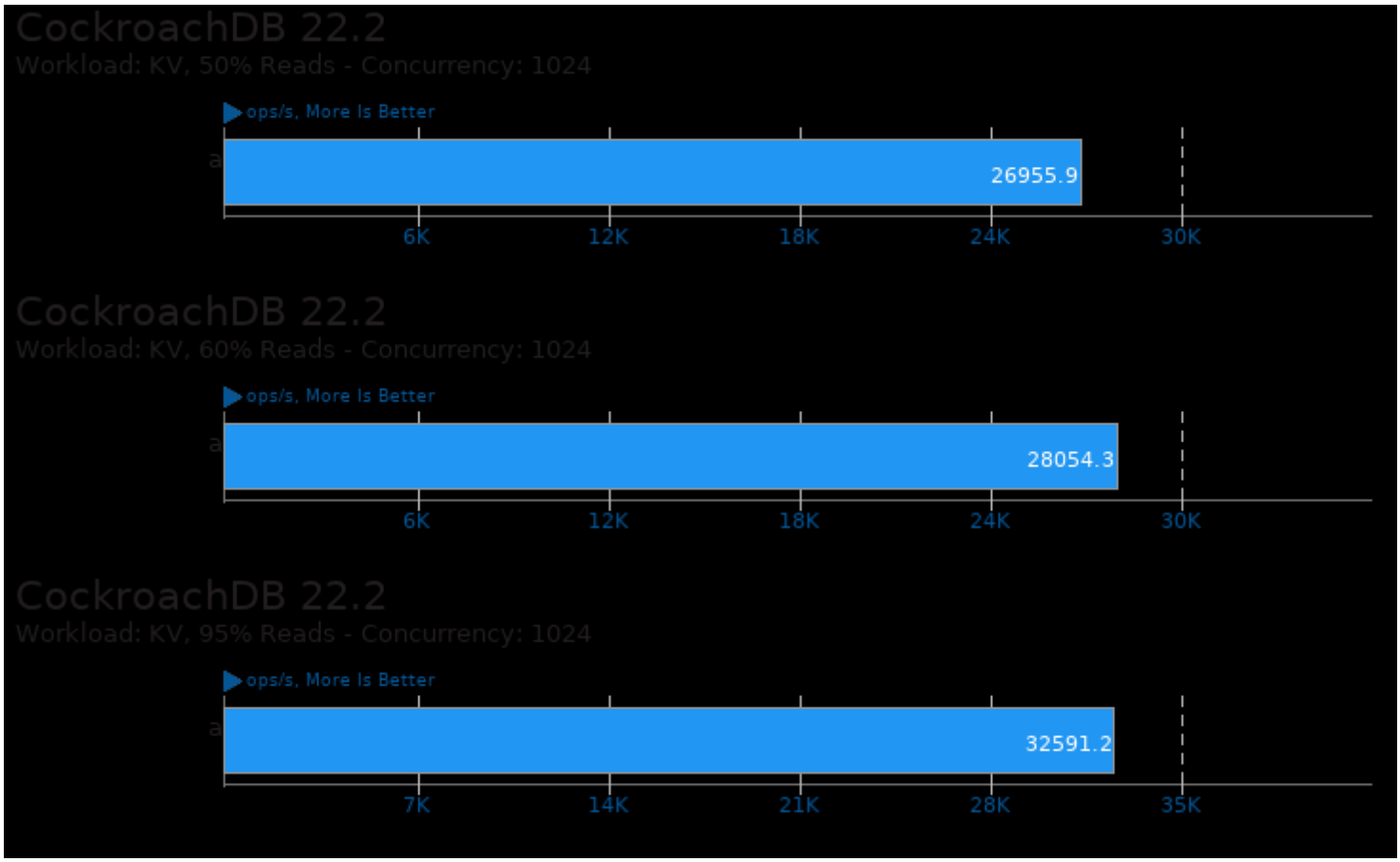

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