



Virgl asynchronous command stream submission

Virgl testing of performance improvement

Automated Executive Summary

Async transfer fixed had the most wins, coming in first place for 62% of the tests.

Based on the geometric mean of all complete results, the fastest (Async transfer fixed) was 1.181x the speed of the slowest (Baseline). Asynchronous command emission and early flush was 0.998x the speed of Async transfer fixed and Baseline was 0.848x the speed of Asynchronous command emission and early flush.

Test Systems:

Baseline

Processor: 8 x QEMU Virtual 2.5+ (8 Cores), Motherboard: QEMU Standard PC (Q35 + ICH9 2009) (rel-1.14.0-0-g155821a1990b-prebuilt.qemu.org BIOS), Chipset: Intel 82G33/G31/P35/P31 + ICH9, Memory: 32GB, Disk: 97GB, Graphics: virgl 12288GB, Audio: Intel 82801I, Monitor: QEMU Monitor, Network: Red Hat Virtio device

OS: Gentoo/Linux, Kernel: 5.15.11-gentoo-x86_64 (x86_64), Display Server: X Server 1.20.14, OpenGL: 4.3 Mesa 22.0.0-devel (git-a167e8ecc8) (LLVM 13.0.0 D...), Compiler: GCC 11.2.0 + LLVM 13.0.0, File-System: ext4, Screen Resolution: 1440x900, System Layer: QEMU

Processor Notes: CPU Microcode: 0x1000065

Python Notes: Python 3.9.9

Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Not affected + spectre_v1: Mitigation of usercopy/swappgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Asynchronous command emission and early flush

Processor: 8 x QEMU Virtual 2.5+ (8 Cores), Motherboard: QEMU Standard PC (Q35 + ICH9 2009) (rel-1.14.0-0-g155821a1990b-prebuilt.qemu.org BIOS), Chipset: Intel 82G33/G31/P35/P31 + ICH9, Memory: 32GB, Disk: 97GB, Graphics: virgl 12288GB, Audio: Intel 82801I, Monitor: QEMU Monitor, Network: Red Hat Virtio device

OS: Gentoo/Linux, Kernel: 5.15.11-gentoo-x86_64 (x86_64), Display Server: X Server 1.20.14, OpenGL: 4.3 Mesa 22.0.0-devel (git-55482b8164) (LLVM 13.0.0 D...), Compiler: GCC 11.2.0 + LLVM 13.0.0, File-System: ext4, Screen Resolution: 1440x900, System Layer: QEMU

Processor Notes: CPU Microcode: 0x1000065

Python Notes: Python 3.9.9

Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Not affected + spectre_v1: Mitigation of usercopy/swappgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Async transfer fixed

Processor: 8 x QEMU Virtual 2.5+ (8 Cores), Motherboard: QEMU Standard PC (Q35 + ICH9 2009) (rel-1.14.0-0-g155821a1990b-prebuilt.qemu.org BIOS), Chipset: Intel 82G33/G31/P35/P31 + ICH9, Memory: 32GB, Disk: 97GB, Graphics: virgl 12288GB, Audio: Intel 82801I, Monitor: QEMU Monitor, Network: Red Hat Virtio device

OS: Gentoo/Linux, Kernel: 5.15.11-gentoo-x86_64 (x86_64), Display Server: X Server 1.20.14, OpenGL: 4.3 Mesa 22.0.0-devel (git-47fee50e3e) (LLVM 13.0.0 D...), Compiler: GCC 11.2.0 + LLVM 13.0.0, File-System: ext4, Screen Resolution: 1024x768, System Layer: QEMU

Processor Notes: CPU Microcode: 0x1000065

Python Notes: Python 3.9.9

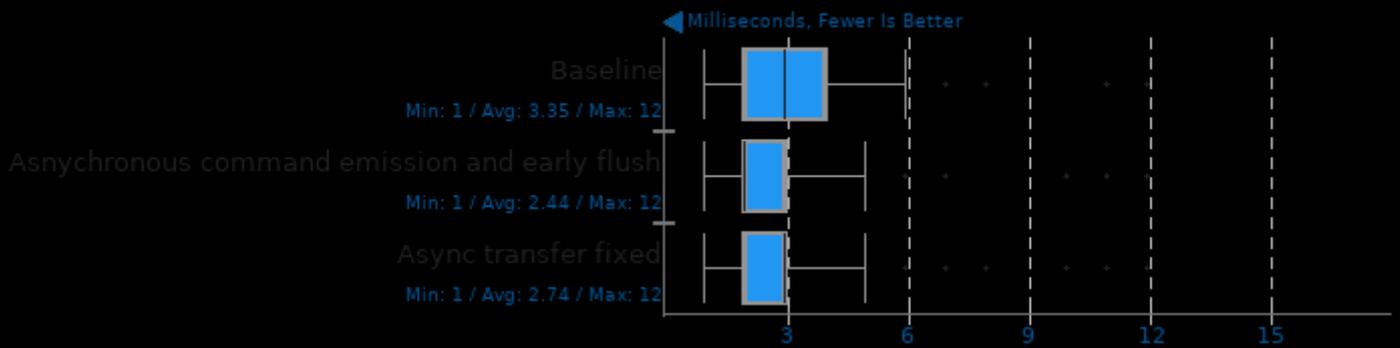
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Not affected + spectre_v1: Mitigation of usercopy/swappgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Baseline	Asynchronous command emission and early flush	Async transfer fixed
OpenArena - 1600 x 900 (FPS)	301.1	412.6	365.5
Normalized	72.98%	100%	88.58%
Standard Deviation	0.6%	1.4%	0.4%
GpuTest - 1600 x 900 (Points)	13369	14741	14618
Normalized	90.69%	100%	99.17%
Standard Deviation	1.4%	0.6%	0.9%
Xonotic - 1024 x 768 - Ultimate (FPS)	250.4787894	268.3132810	271.1263553

	Normalized	92.38%	98.96%	100%
	Standard Deviation	0.4%	0.3%	0.2%
Unigine Heaven - 1600 x 900 - Fullscreen - OpenGL (FPS)		162.689	163.886	165.368
	Normalized	98.38%	99.1%	100%
	Standard Deviation	0.6%	0.2%	0.2%
GLmark2 - 1024 x 768 (Score)		4672	4640	4613
	Normalized	100%	99.32%	98.74%
Unigine Valley - 1600 x 900 - Fullscreen - OpenGL (FPS)		160.499	159.183	161.147
	Normalized	99.6%	98.78%	100%
	Standard Deviation	0.4%	1.6%	0.5%
Unigine Tropics - 1600 x 900 - Fullscreen		168.360	232.878	235.961
	Normalized	71.35%	98.69%	100%
	Standard Deviation	9.8%	10.3%	7.5%
Unigine Sanctuary - 1600 x 900 - Fullscreen (FPS)		213.194	357.740	397.093
	Normalized	53.69%	90.09%	100%
	Standard Deviation	30.7%	22.2%	28.9%

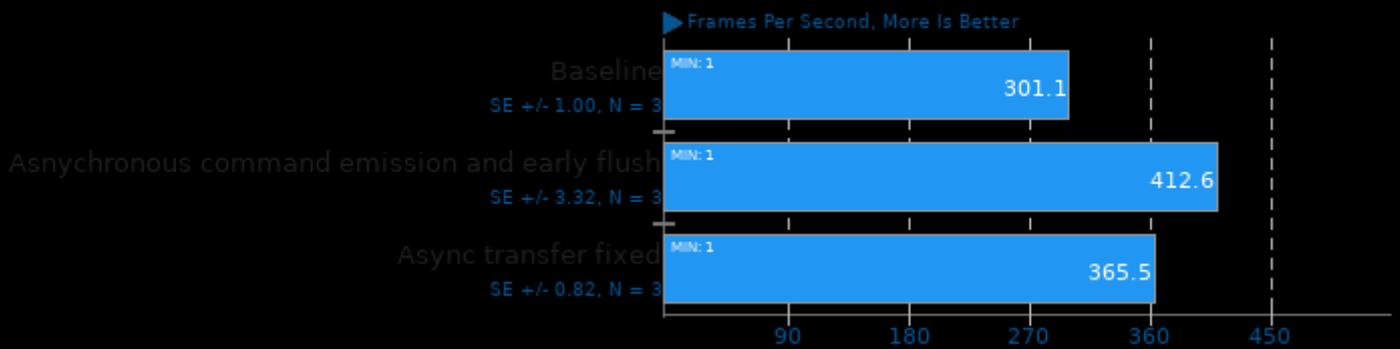
OpenArena 0.8.8

Resolution: 1600 x 900 - Total Frame Time



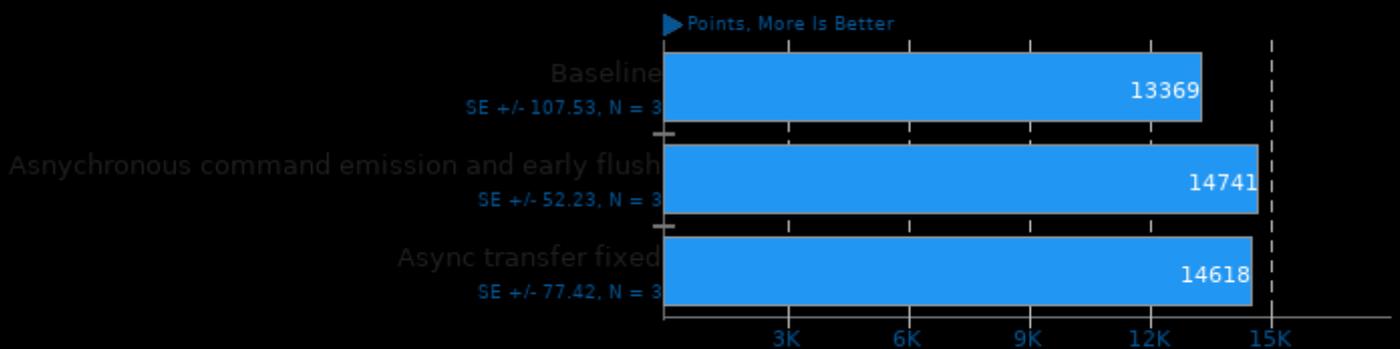
OpenArena 0.8.8

Resolution: 1600 x 900



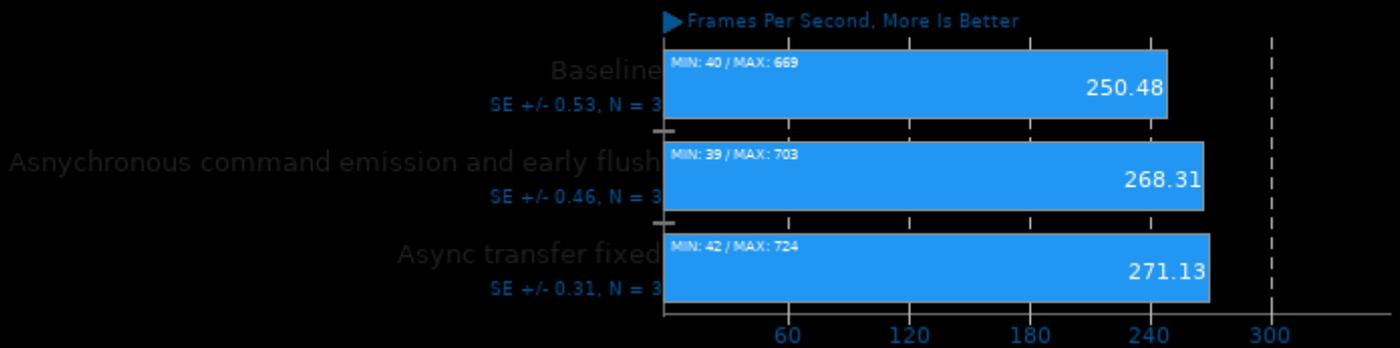
GpuTest 0.7.0

Resolution: 1600 x 900



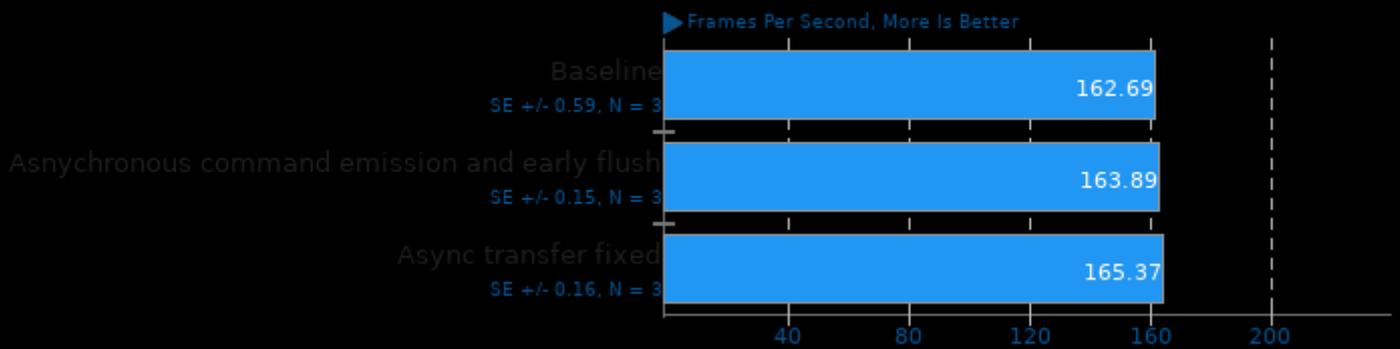
Xonotic 0.8.2

Resolution: 1024 x 768 - Effects Quality: Ultimate



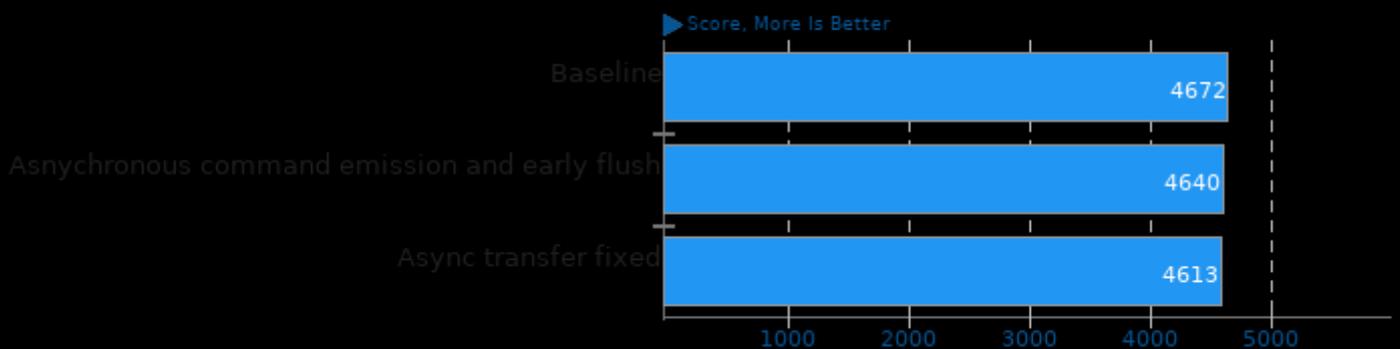
Unigine Heaven 4.0

Resolution: 1600 x 900 - Mode: Fullscreen - Renderer: OpenGL



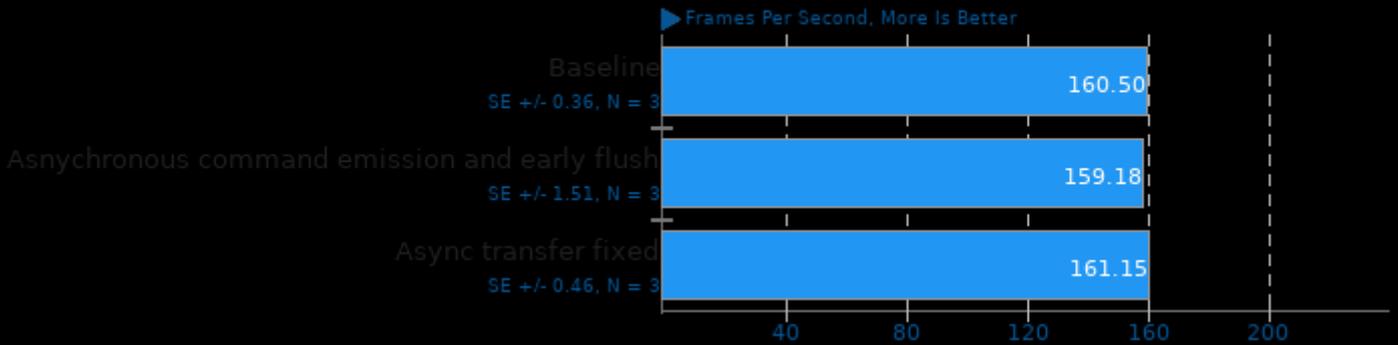
GLmark2 2021.08.30

Resolution: 1024 x 768



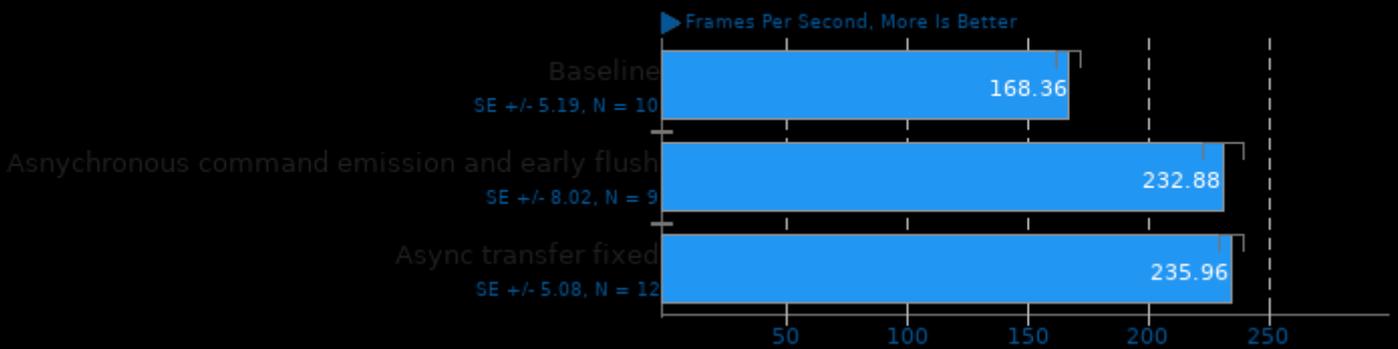
Unigine Valley 1.0

Resolution: 1600 x 900 - Mode: Fullscreen - Renderer: OpenGL



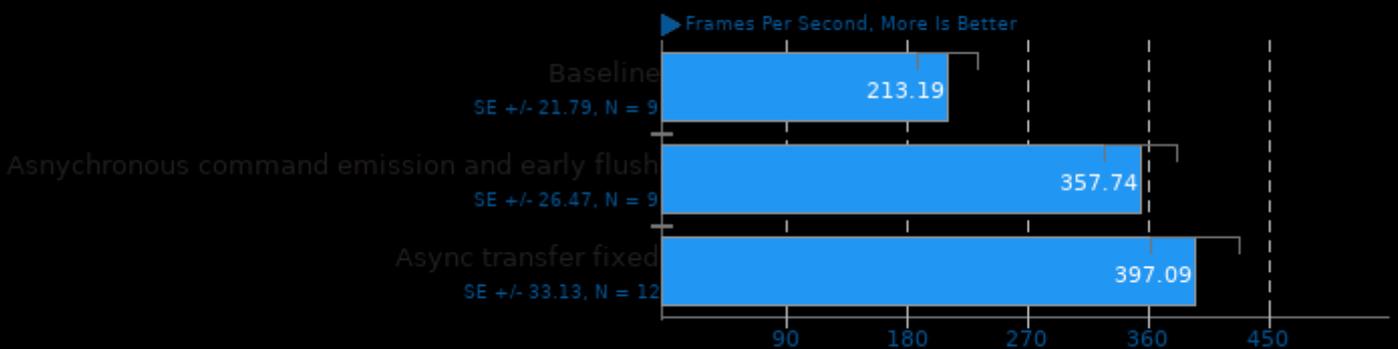
Unigine Tropics 1.3

Resolution: 1600 x 900 - Mode: Fullscreen

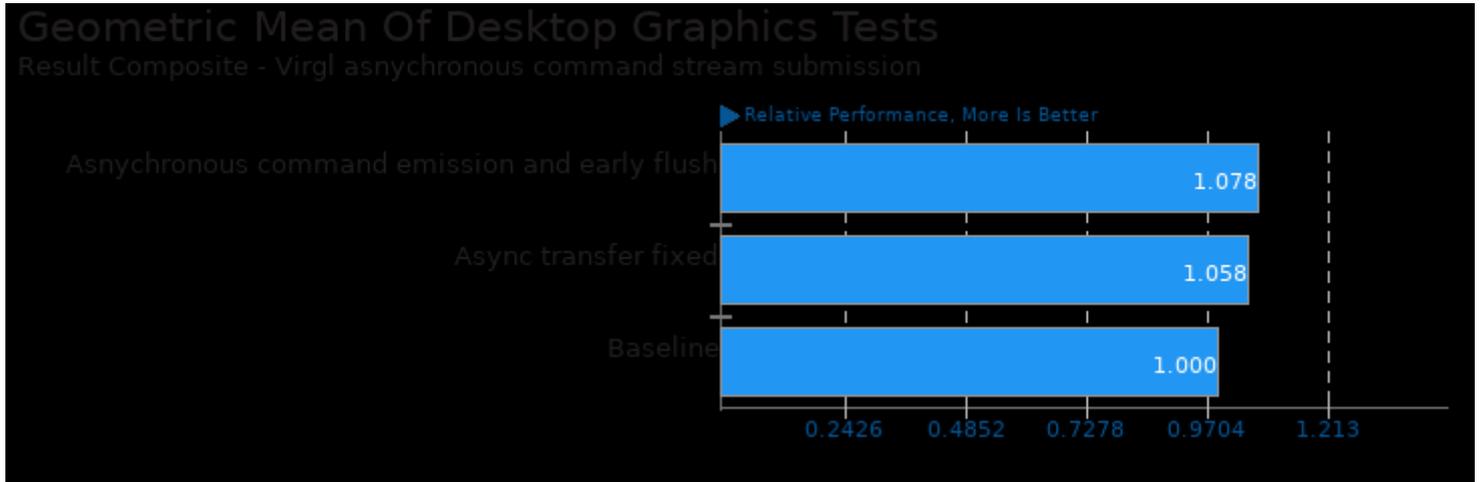


Unigine Sanctuary 2.3

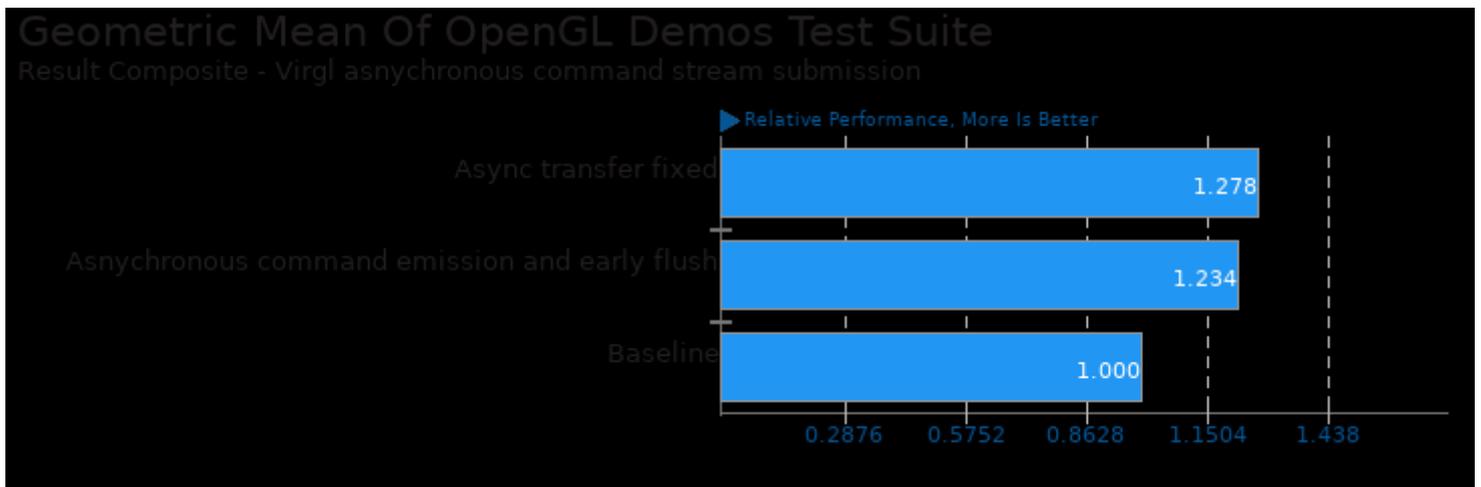
Resolution: 1600 x 900 - Mode: Fullscreen



These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/xonotic, pts/openarena, pts/unigine-valley, pts/unigine-heaven and pts/glmark2



Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven, pts/unigine-sanctuary and pts/unigine-tropics



Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven, pts/unigine-sanctuary and pts/unigine-tropics

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 07:47.