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Radeon AMDGPU Module Parameter Tests

AMDGPU kernel driver tuning tests. Tests by Michael Larabel for a future article.

Automated Executive Summary

PP + DRI2 had the most wins, coming in first place for 33% of the tests.

Based on the geometric mean of all complete results, the fastest (PP + DRI3 + Sched_Jobs 64) was 3.382x the speed of the slowest (Default Linux 4.5 DRM). PP + DRI3 + Semaphores was 0.977x the speed of PP + DRI3 + Sched_Jobs 64, PP + DRI3 was 0.998x the speed of PP + DRI3 + Semaphores, PP + DRI2 was 0.996x the speed of PP + DRI3, PP + DRI3 + No Scheduler was 0.957x the speed of PP + DRI2, Default Linux 4.5 DRM was 0.319x the speed of PP + DRI3 + No Scheduler.

Test Systems:

Default Linux 4.5 DRM

PP + DRI2

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E7 v3/Xeon, Memory: 16384MB, Disk: 120GB Samsung SSD 850, Graphics: XFX AMD Radeon R9 285/380 2048MB, Audio: Realtek ALC1150, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 15.10, Kernel: 4.4.0-rc3-4.5-next-phx-xmas (x86_64) 20151222, Desktop: Unity, Display Server: X Server 1.17.2, Display Driver: radeon 7.6.99, OpenGL: 3.0 Mesa 11.2.0-devel (padoka PPA) Gallium 0.4, Compiler: GCC 5.2.1 20151010, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: amdgpu.powerplay=1
Processor Notes: Scaling Governor: intel_pstate powersave

PP + DRI3

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E7 v3/Xeon, Memory: 16384MB, Disk: 120GB Samsung SSD 850, Graphics: XFX AMD Radeon R9 285/380 2048MB, Audio: Realtek ALC1150, Monitor: DELL P2415Q, Network: Intel Connection

OS: Ubuntu 15.10, Kernel: 4.4.0-rc3-4.5-next-phx-xmas (x86_64) 20151222, Desktop: Unity, Display Server: X Server 1.17.2, Display Driver: radeon 7.6.99, OpenGL: 3.0 Mesa 11.2.0-devel (padoka PPA) Gallium 0.4, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: amdgpu.powerplay=1
Processor Notes: Scaling Governor: intel_pstate powersave

PP + DRI3 + Semaphores

PP + DRI3 + No Scheduler

PP + DRI3 + Sched_Jobs 64

Processor: Intel Core i7-5960X @ 3.50GHz (16 Cores), Motherboard: Gigabyte X99-UD4-CF, Chipset: Intel Xeon E7 v3/Xeon, Memory: 16384MB, Disk: 120GB Samsung SSD 850, Graphics: XFX AMD Radeon R9 285/380 2048MB, Audio: Realtek ALC1150, Monitor: DELL P2415Q, Network: Intel Connection

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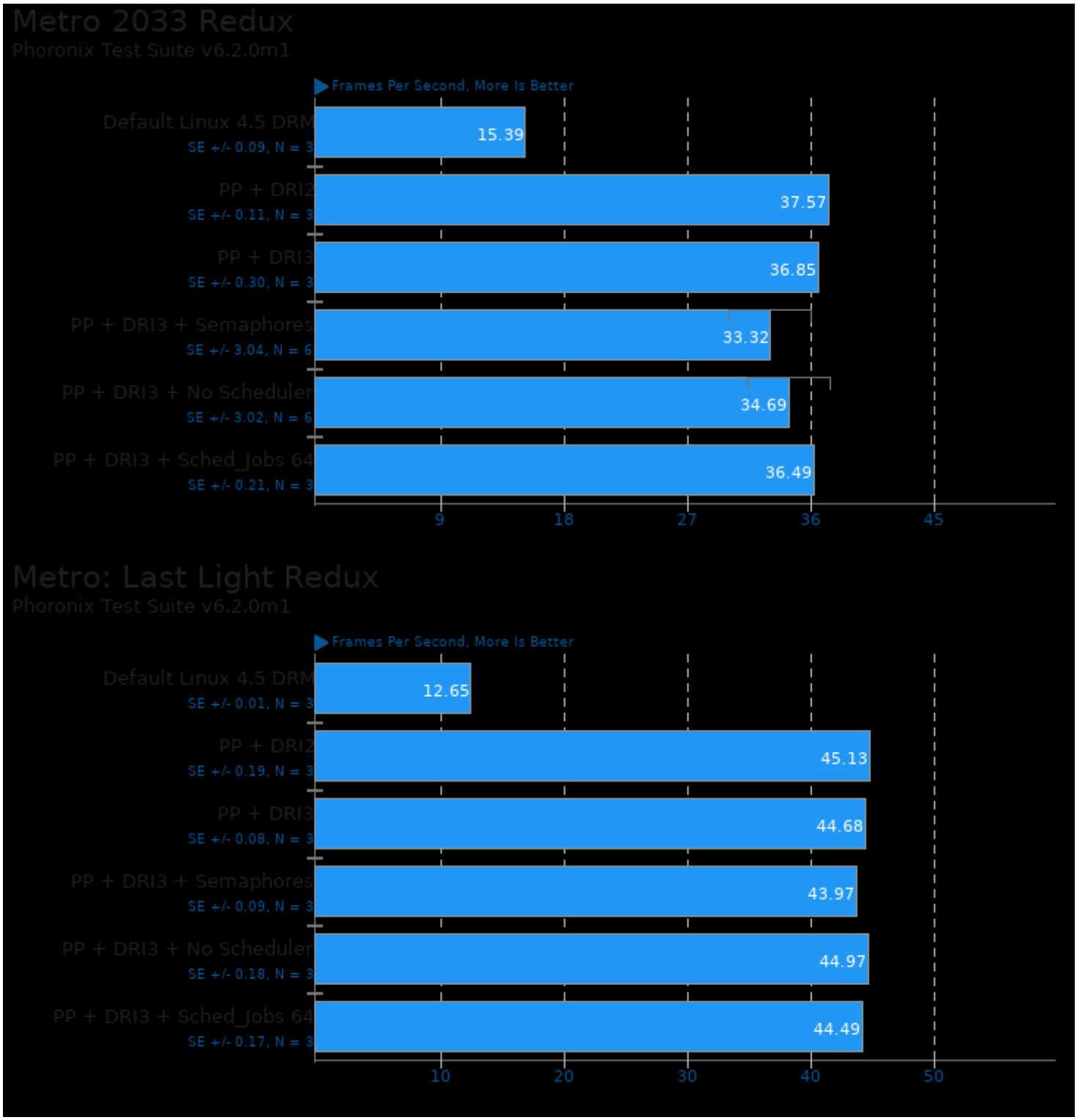
Kernel Notes: amdgpu.powerplay=1 amdgpu.sched_jobs=64
Processor Notes: Scaling Governor: intel_pstate powersave

	Default Linux 4.5 DRM	PP + DRI2	PP + DRI3	PP + DRI3 + Semaphores	PP + DRI3 + No Scheduler	PP + DRI3 + Sched_Jobs 64

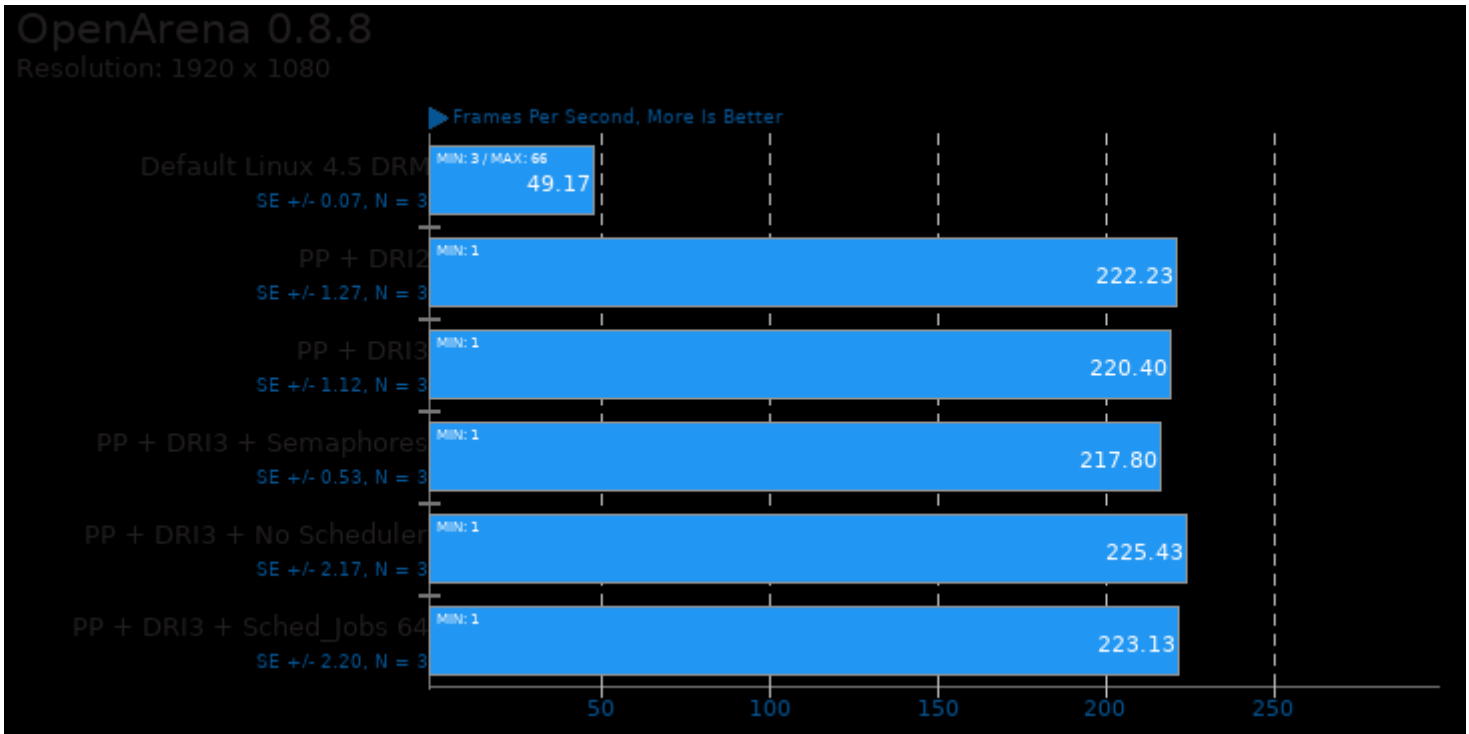
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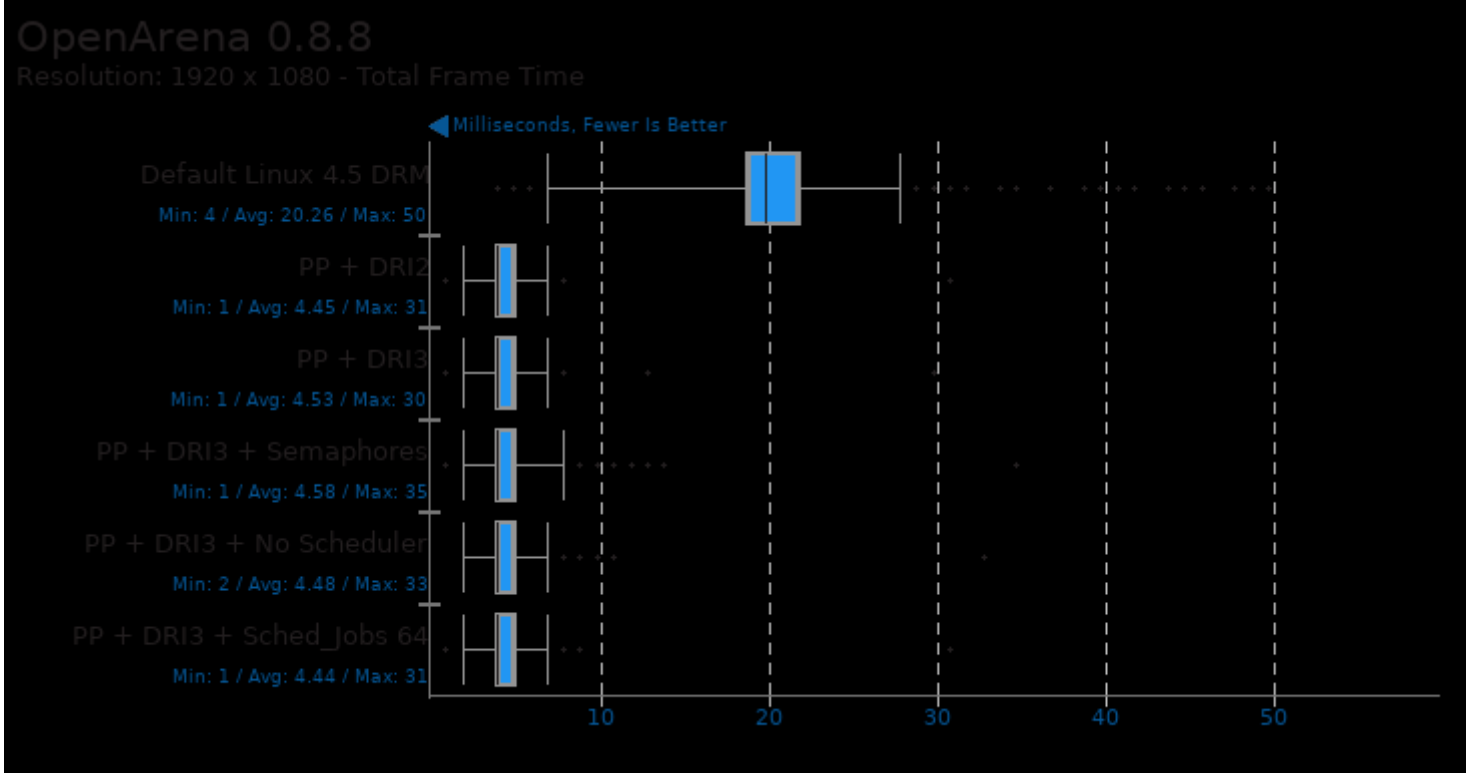
Metro 2033 Redux - P.T.S.v.2.0 (FPS)	**15.39**	**37.57**	36.85	33.32	34.69	36.49
Normalized	40.96%	100%	98.08%	88.69%	92.33%	97.13%
Standard Deviation	1%	0.5%	1.4%	22.4%	21.3%	1%
Metro: Last Light Redux - P.T.S.v.2.0 (FPS)	**12.65**	**45.13**	44.68	43.97	44.97	44.49
Normalized	28.03%	100%	99%	97.43%	99.65%	98.58%
Standard Deviation	0.2%	0.7%	0.3%	0.3%	0.7%	0.7%
OpenArena - 1920 x 1080 (FPS)	**49.17**	222.23	220.40	217.80	**225.43**	223.13
Normalized	21.81%	98.58%	97.77%	96.62%	100%	98.98%
Standard Deviation	0.2%	1%	0.9%	0.4%	1.7%	1.7%
Tesseract - 1920 x 1080	**33.94**	140.32	139.19	**151.98**	122.39	151.21
Normalized	22.33%	92.33%	91.58%	100%	80.53%	99.49%
Standard Deviation	0.8%	2.3%	2.4%	1.3%	1.2%	1.1%
Team Fortress 2 - 1920 x 1080 (FPS)	**55.29**		74.78	69.82	61.94	**76.11**
Normalized	72.64%		98.25%	91.74%	81.38%	100%
Standard Deviation	0.6%		3%	3%	0.9%	4.4%
Xonotic - 1920 x 1080 - Ultimate (FPS)	**58.25**	136.30	145.59	**153.53**	134.06	152.95
Normalized	37.94%	88.78%	94.83%	100%	87.32%	99.62%
Standard Deviation	0.1%	1%	7.1%	2.6%	1.4%	2.6%

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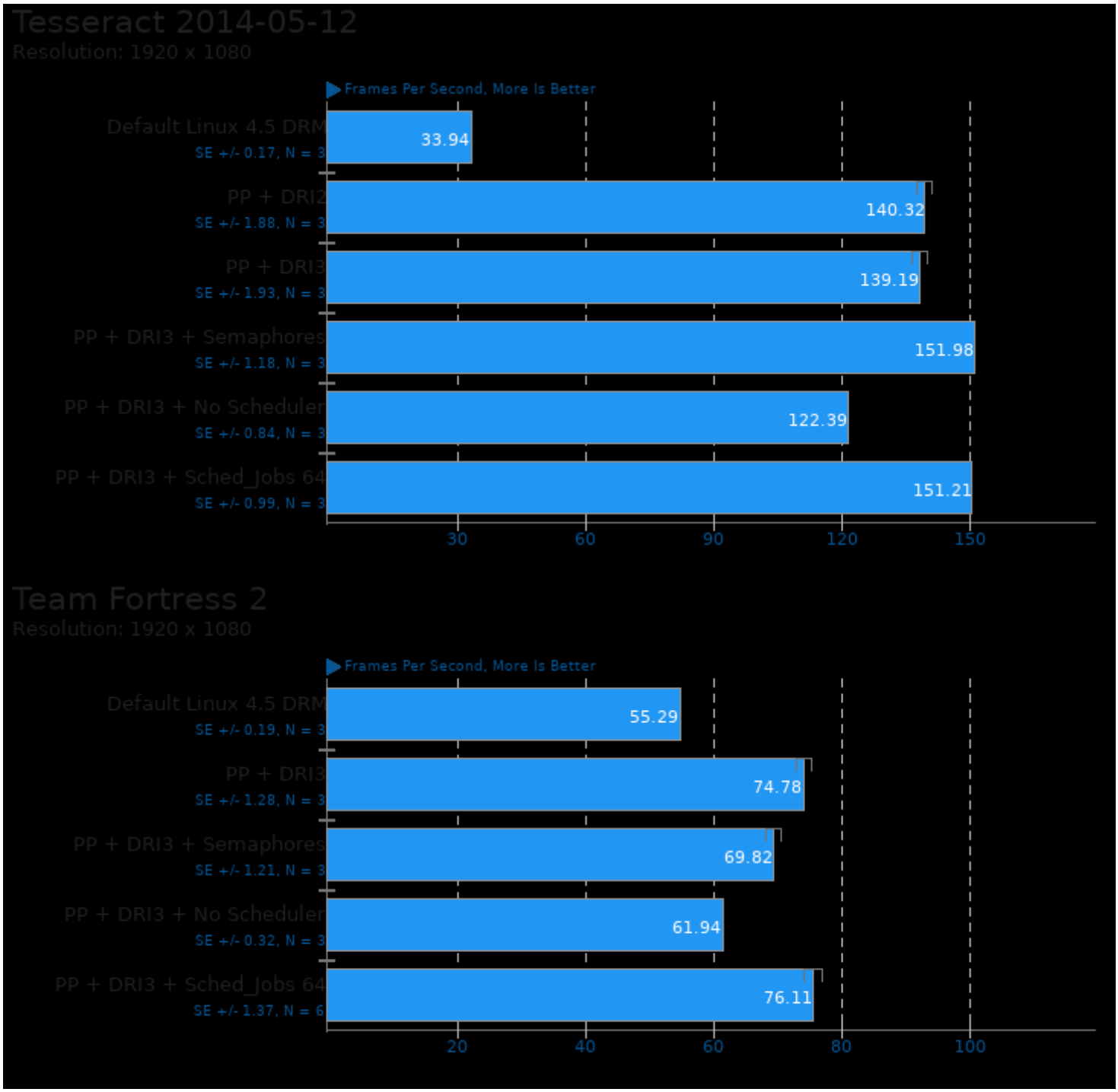


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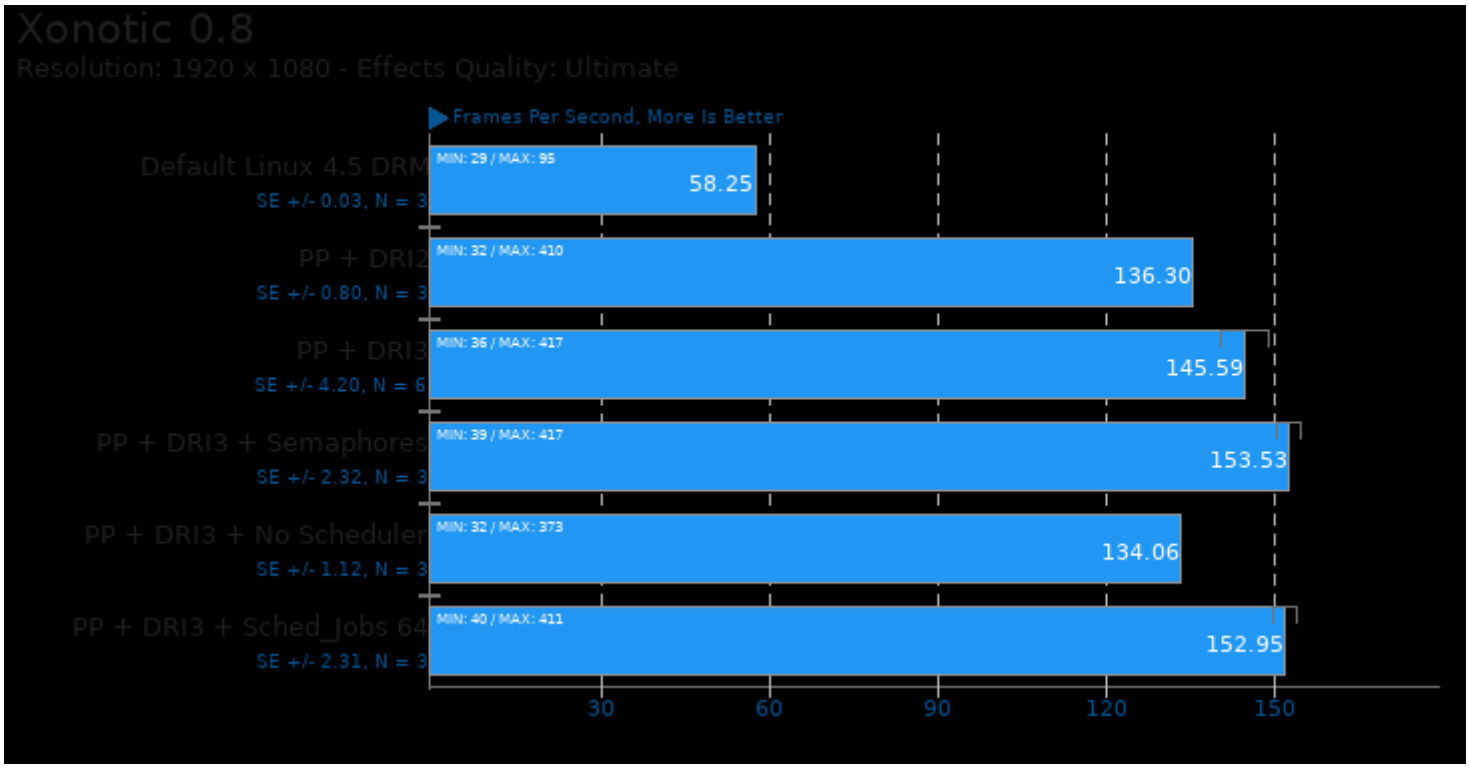




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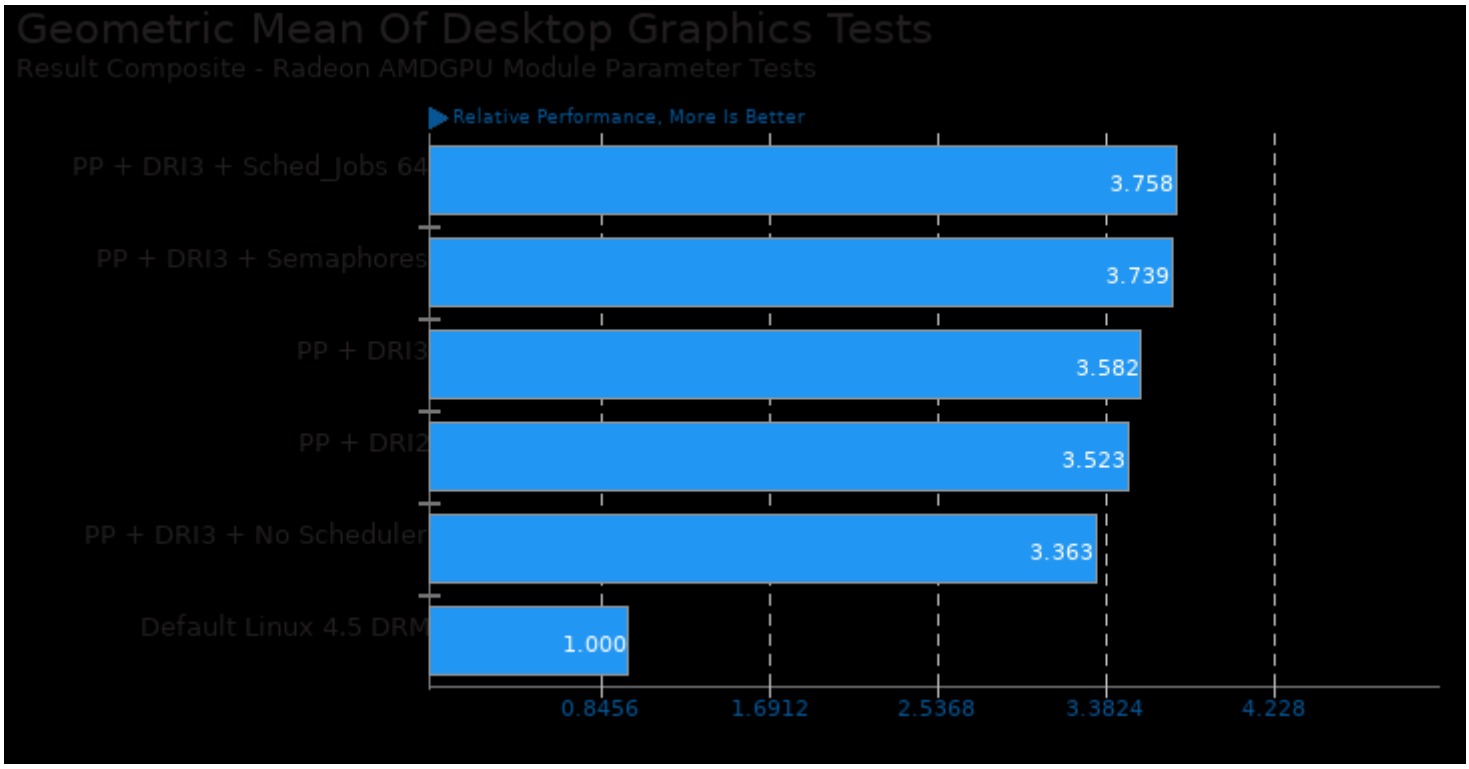


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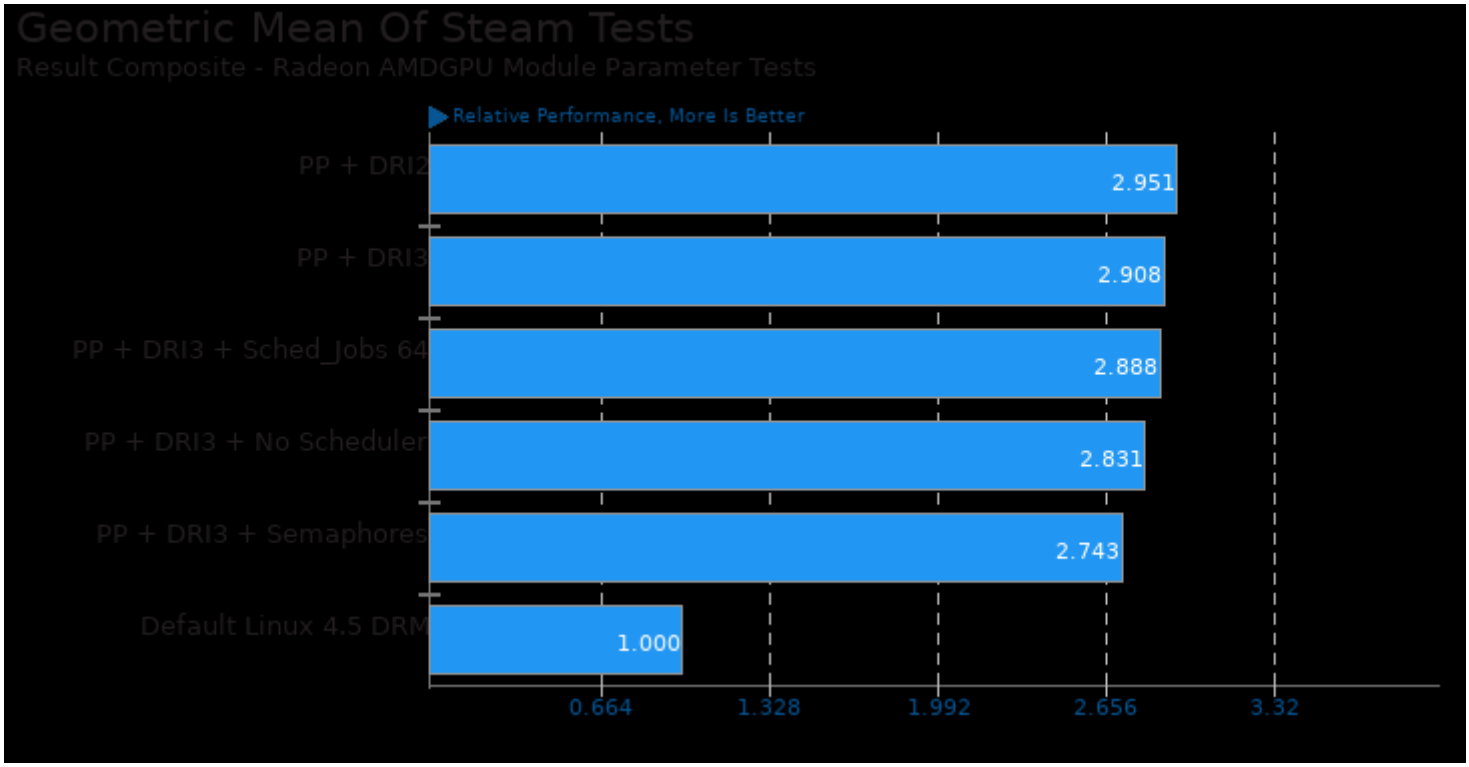


Radeon AMDGPU Module Parameter Tests

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



Geometric mean based upon tests: pts/xonotic, pts/openarena and pts/tesseract



Geometric mean based upon tests: pts/metro2033-redux, pts/metroll-redux and pts/tf2

This file was automatically generated via the Phoronix Test Suite benchmarking software on Monday, 18 March 2024 23:01.