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BIOSHOCK-COMPREHENSIVE

Intel Core i7-4600U testing with a Dell 0PRPKP (A22 BIOS) and Intel HD 4400 HSW GT2 2GB on ManjaroLinux 21.2.6 via the Phoronix Test Suite.

Automated Executive Summary

Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400 had the most wins, coming in first place for 71% of the tests.

Test Systems:

Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400

Processor: Intel Core i7-4600U @ 3.30GHz (2 Cores / 4 Threads), Motherboard: Dell 0PRPKP (A22 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 16GB, Disk: 1024GB SAMSUNG MZMTE1T0, Graphics: Intel HD 4400 HSW GT2 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: ManjaroLinux 21.2.6, Kernel: 5.18.0-1-MANJARO (x86_64), Desktop: KDE Plasma 5.24.5, Display Server: X Server

1.21.1.3, OpenGL: 4.6 Mesa 22.2.0-devel (git-28da4359a3), OpenCL: OpenCL 2.0 beignet 1.4 (git-419c0417) + OpenCL 2.1 LINUX + OpenCL 1.1 Mesa 22.2.0-devel (git-28da4359a3), Vulkan: 1.3.211, Compiler: GCC 12.1.0 + Clang 15.0.0, File-System: btrfs, Screen Resolution: 1366x768

Kernel Notes: i915.enable_rc6=0 - Transparent Huge Pages: madvise
Environment Notes: MESA_GL_VERSION_OVERRIDE=4.6
Processor Notes: Scaling Governor: intel_cpufreq performance - CPU Microcode: 0x26
Graphics Notes: SNA
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

2nd-Run/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400

Run-2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400

Processor: Intel Core i7-4600U @ 2.70GHz (2 Cores / 4 Threads), Motherboard: Dell 0PRPKP (A22 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 16GB, Disk: 1024GB SAMSUNG MZMTE1T0, Graphics: Intel HD 4400 HSW GT2 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: ManjaroLinux 21.2.6, Kernel: 5.17.7-lqx1-1-lqx (x86_64), Desktop: KDE Plasma 5.24.5, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.0.3, OpenCL: OpenCL 2.0 beignet 1.4 (git-419c0417) + OpenCL 2.1 LINUX, Vulkan: 1.3.204, Compiler: GCC 12.1.0 + Clang 13.0.1 + LLVM 13.0.1, File-System: btrfs, Screen Resolution: 1366x768

Kernel Notes: i915.enable_rc6=0 - Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0x26
Graphics Notes: SNA
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400

Intel HD 4400 HSW GT2

Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400-

Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400--

- Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400--

Processor: Intel Core i7-4600U @ 2.70GHz (2 Cores / 4 Threads), Motherboard: Dell 0PRPKP (A22 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 16GB, Disk: 1024GB SAMSUNG MZMTE1T0, Graphics: Intel HD 4400 HSW GT2 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: ManjaroLinux 21.2.6, Kernel: 5.17.7-lqx1-1-lqx (x86_64), Desktop: KDE Plasma 5.24.5, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.2.0-devel (git-57293dee2b), OpenCL: OpenCL 2.0 beignet 1.4 (git-419c0417) + OpenCL 2.1 LINUX + OpenCL 1.1 Mesa 22.2.0-devel (git-57293dee2b), Vulkan: 1.3.211, Compiler: GCC 12.1.0 + Clang 15.0.0, File-System: btrfs, Screen Resolution: 1366x768

Kernel Notes: i915.enable_rc6=0 - Transparent Huge Pages: madvise
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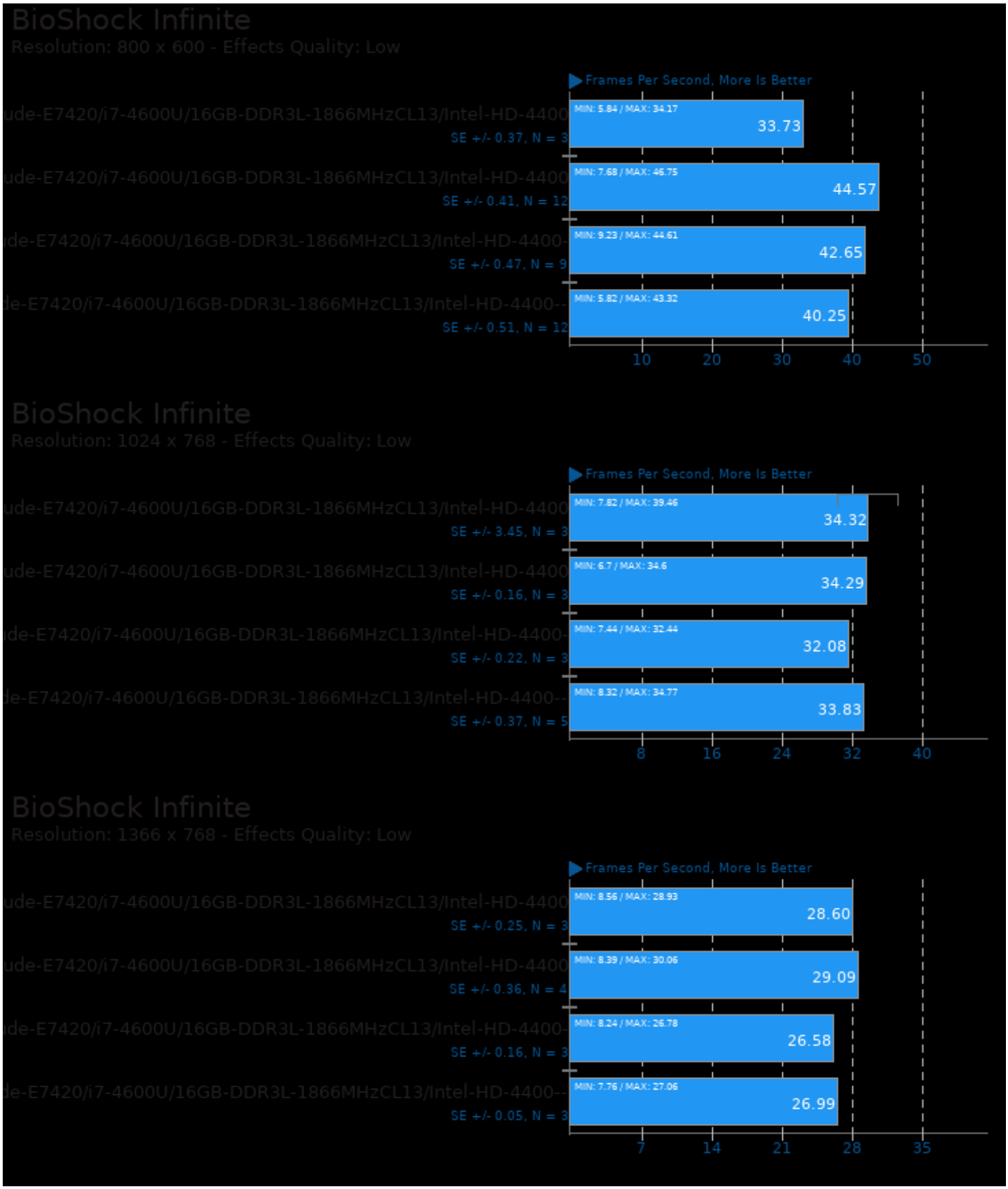
tsx_async_abort: Not affected

	Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400	2nd-Run/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400	Run-2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400	Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400	Intel HD 4400 HSW GT2	Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400-	Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400--	-Run2/Latitude-E7420/i7-4600U/16GB-DDR3L-1866MHzCL13/Intel-HD-4400--
BioShock Infinite - 800 x 600 - Low (FPS)	33.73		44.57			42.65		40.25
Normalized	75.68%		100%			95.69%		90.31%
Standard Deviation	1.9%		3.2%			3.3%		4.4%
BioShock Infinite - 1024 x 768 - Low (FPS)	34.32		34.29			32.08		33.83
Normalized	100%		99.91%			93.47%		98.57%
Standard Deviation	17.4%		0.8%			1.2%		2.4%
BioShock Infinite - 1366 x 768 - Low (FPS)	28.60		29.09			26.58		26.99
Normalized	98.32%		100%			91.37%		92.78%
Standard Deviation	1.5%		2.5%			1.1%		0.3%
BioShock Infinite - 800 x 600 - High (FPS)	47.07		44.66			42.23		43.66
Normalized	100%		94.88%			89.72%		92.76%
Standard Deviation	1.2%		4.2%			1.9%		0.4%
BioShock Infinite - 1024 x 768 - High (FPS)	38.50		35.12			32.43		33.10
Normalized	100%		91.22%			84.23%		85.97%
Standard Deviation	5.5%		1%			2.4%		1.3%
BioShock Infinite - 1366 x 768 - High (FPS)	30.65		28.46			26.44		25.58
Normalized	100%		92.85%			86.26%		83.46%
Standard Deviation	1.6%		2%			1.9%		0.8%
BioShock Infinite - 800 x 600 - Ultra (FPS)	50.63		39.50			42.55		40.93
Normalized	100%		78.02%			84.04%		80.84%
Standard Deviation	0.5%		32.2%			8.4%		1.7%
BioShock Infinite - 1024 x 768 - Ultra (FPS)	38.64		19.96					33.00
Normalized	100%		51.66%					85.4%
Standard Deviation	0.2%		2.1%					2.5%
BioShock Infinite - 1366 x 768 - Ultra (FPS)	30.75		17.51					26.56
Normalized	100%		56.94%					86.37%
Standard Deviation	1.4%		1.8%					2.2%

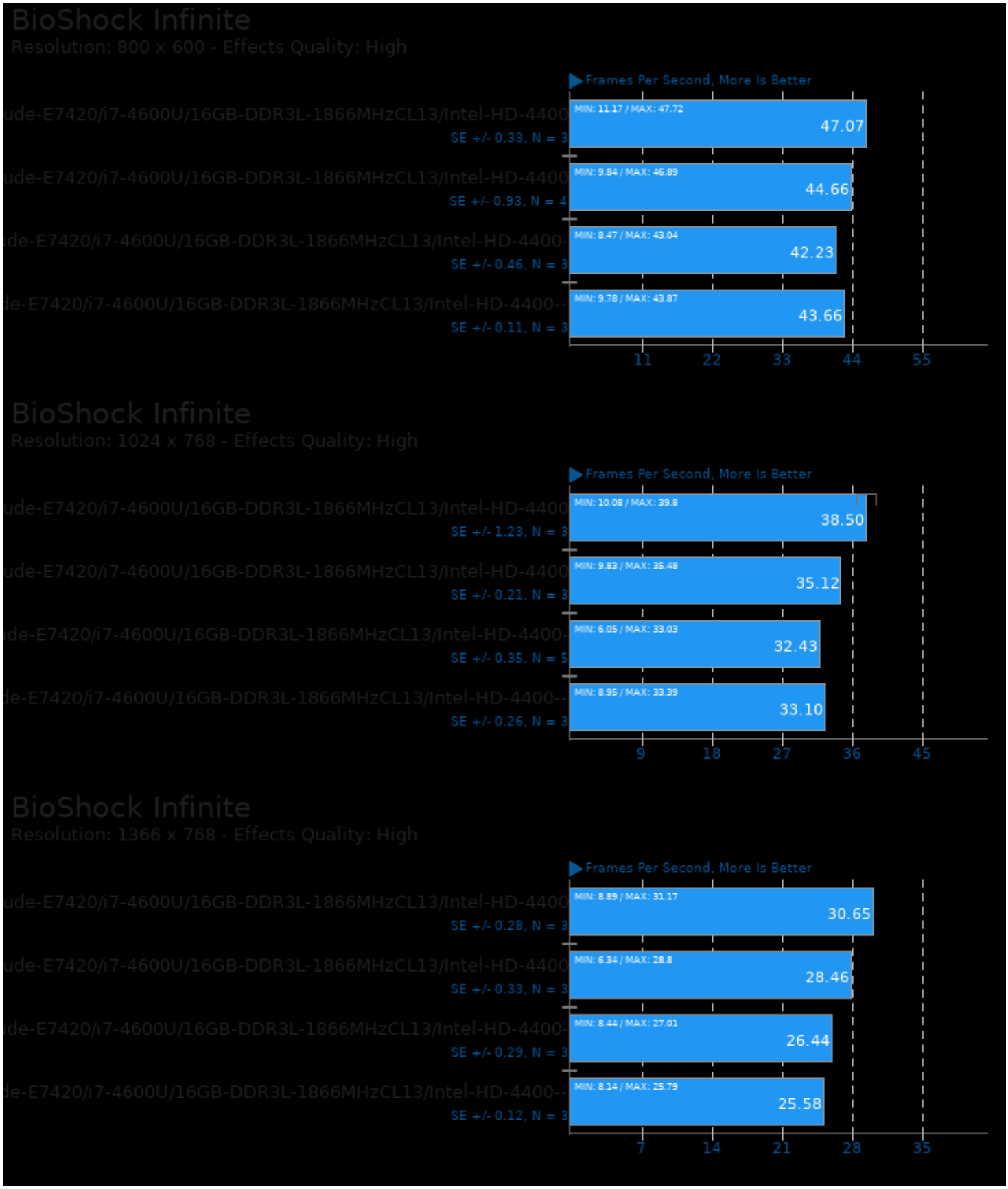
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BioShock Infinite - 800 x 600 - Medium (FPS)	**51.33**	**40.87**
Normalized	100%	79.62%
Standard Deviation	0.9%	5%
BioShock Infinite - 1024 x 768 - Medium (FPS)	**39.11**	**32.08**
Normalized	100%	82.03%
Standard Deviation	1.8%	2.4%
BioShock Infinite - 1366 x 768 - Medium (FPS)	**30.99**	**26.26**
Normalized	100%	84.74%
Standard Deviation	0.9%	1.9%
BioShock Infinite - 800 x 600 - Very High (FPS)	**50.58**	**41.31**
Normalized	100%	81.67%
Standard Deviation	1.1%	1.9%
BioShock Infinite - 1024 x 768 - Very High (FPS)	**39.24**	**31.64**
Normalized	100%	80.63%
Standard Deviation	1.7%	1.4%
BioShock Infinite - 1366 x 768 - Very High (FPS)	**30.88**	**26.67**
Normalized	100%	86.37%
Standard Deviation	2%	0.7%

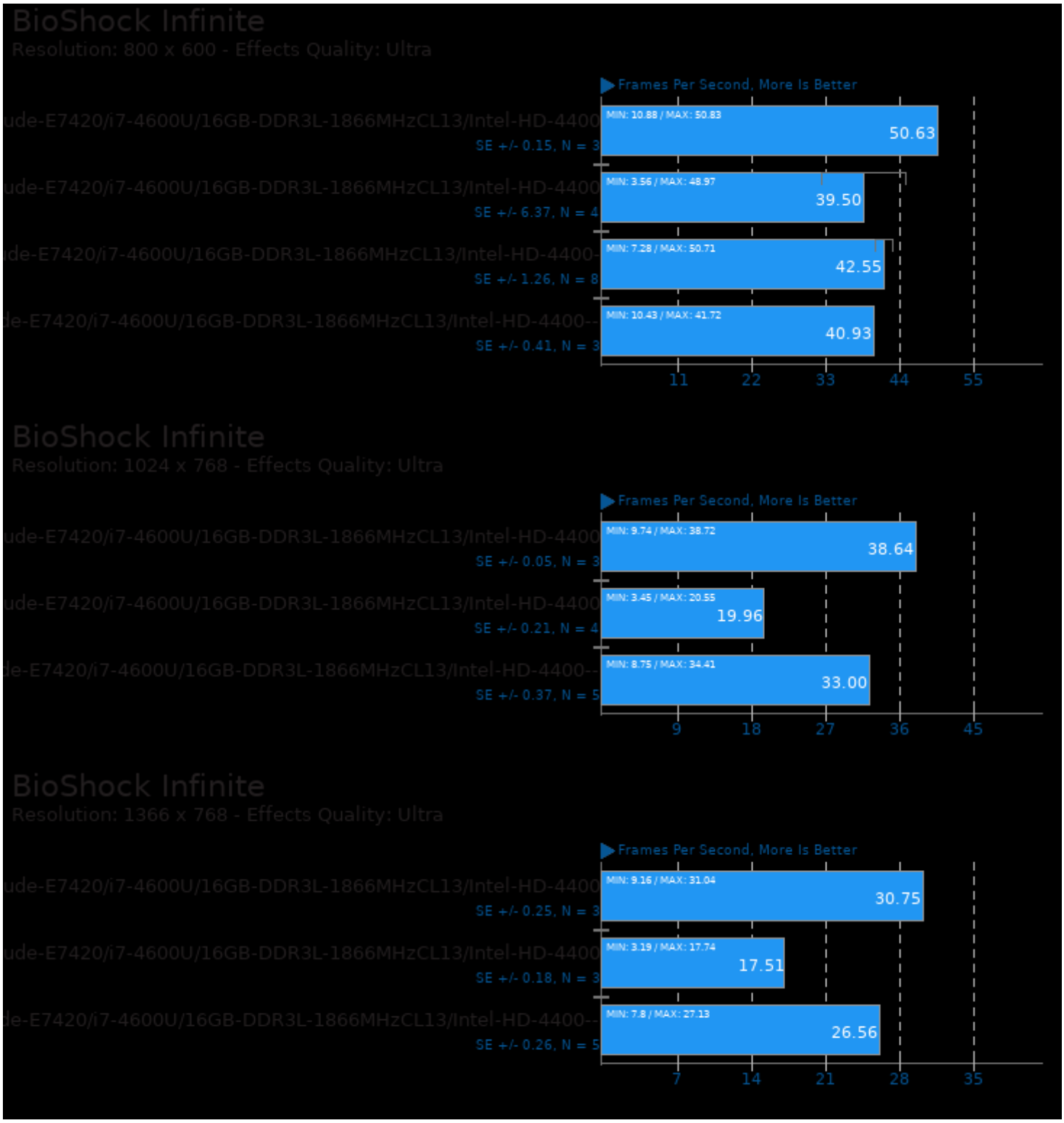
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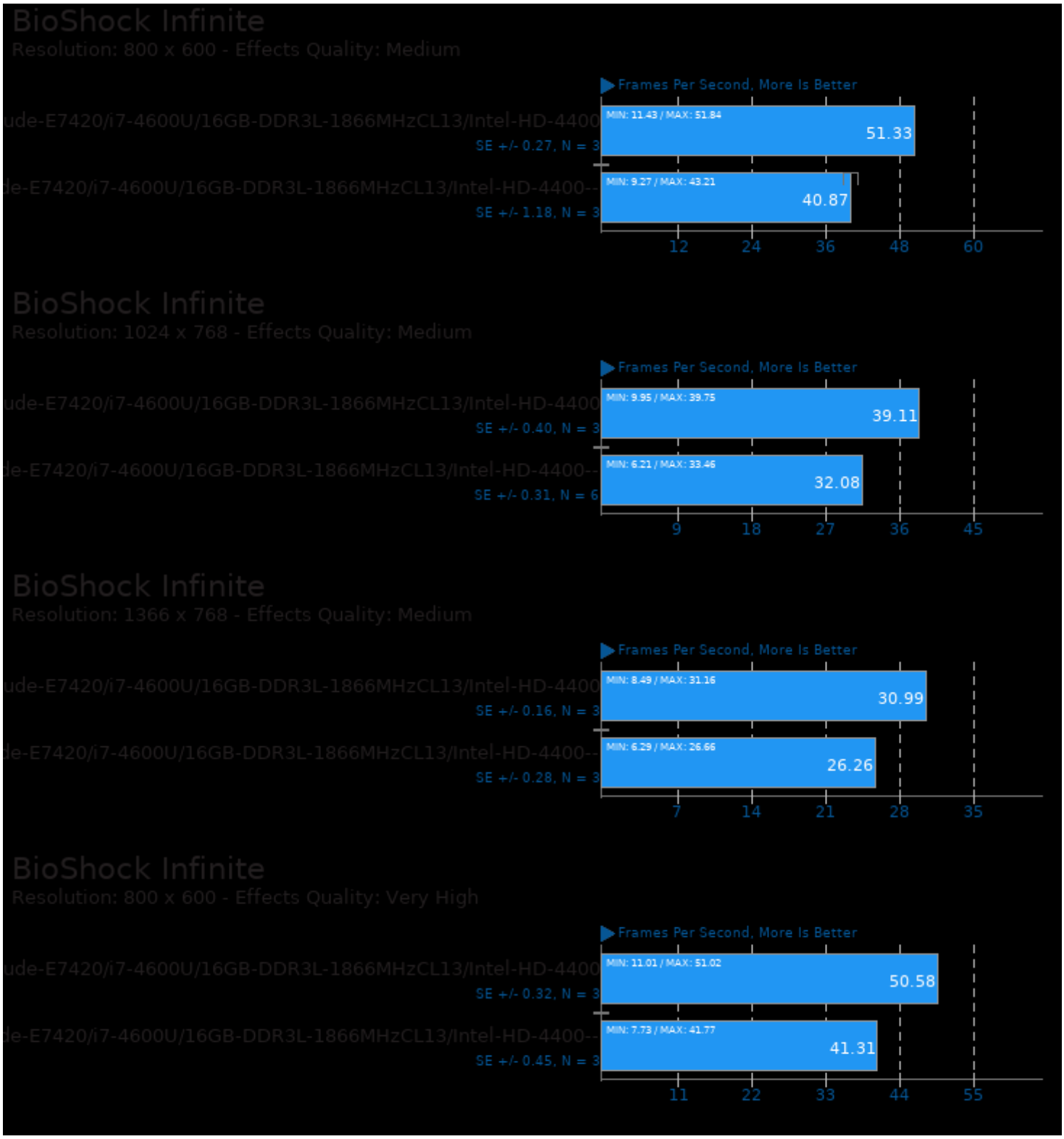
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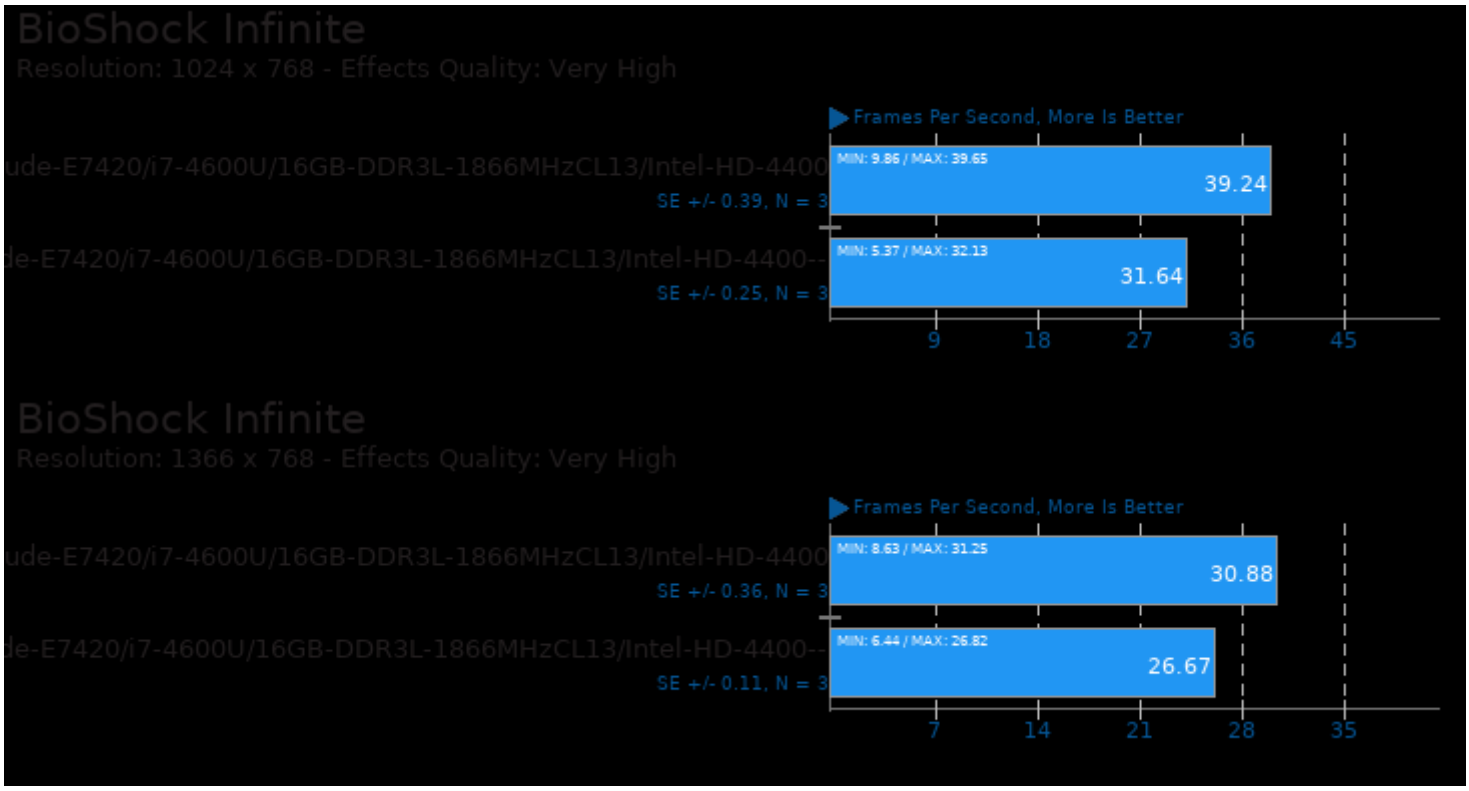
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