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1080p Ryzen 5 5500U Radeon Graphics

AMD Ryzen 5 4500U testing with a LENOVO LNVNB161216 (EECN20WW BIOS) and AMD Renoir 512MB on Ubuntu 21.10 via the Phoronix Test Suite.

Test Systems:

Lenovo IdeaPad 5500U: Linux 5.15

Processor: AMD Ryzen 5 5500U @ 2.10GHz (6 Cores / 12 Threads), Motherboard: LENOVO LNVNB161216 (GLCN22WW BIOS), Chipset: AMD Renoir/Cezanne, Memory: 6GB, Disk: 256GB SAMSUNG MZALQ256HBJD-00BL2, Graphics: AMD Lucienne 2GB (1800/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Qualcomm Atheros QCA6174 802.11ac

OS: Ubuntu 21.10, Kernel: 5.15.6-051506-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.0-devel (git-d2148af 2021-12-24 impish-oibaf-ppa) (LLVM 13.0.0 DRM 3.42 5.15.6-051506-generic), Vulkan: 1.2.199, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8608102

Graphics Notes: BAR1 / Visible vRAM Size: 2048 MB
Python Notes: Python 3.9.7
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Lenovo IdeaPad 5500U: Linux 5.16

Processor: AMD Ryzen 5 5500U @ 2.10GHz (6 Cores / 12 Threads), Motherboard: LENOVO LNVNB161216 (GLCN22WW BIOS), Chipset: AMD Renoir/Cezanne, Memory: 6GB, Disk: 256GB SAMSUNG MZALQ256HBJD-00BL2, Graphics: AMD Lucienne 2GB (1800/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Qualcomm Atheros QCA6174 802.11ac

OS: Ubuntu 21.10, Kernel: 5.16.0-051600rc6daily20211224-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.0-devel (git-d2148af 2021-12-24 impish-oibaf-ppa) (LLVM 13.0.0 DRM 3.44 5.16.0-051600rc6daily20211224-generic), Vulkan: 1.2.199, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

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ASUS ROG 5900HX: Linux 5.15

Processor: AMD Ryzen 9 5900HX @ 3.30GHz (8 Cores / 16 Threads), Motherboard: ASUS G513QY v1.0 (G513QY.311 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZVLQ512HBLU-00B00, Graphics: ASUS AMD Cezanne 512MB (2600/1000MHz), Audio: AMD Navi 21 HDMI Audio, Monitor: LQ156M1JW25, Network: Realtek RTL8111/8168/8411 + MEDIATEK Device 7961

OS: Ubuntu 21.10, Kernel: 5.15.0-051500-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.0-devel (git-9cb9101 2022-01-08 impish-oibaf-ppa) (LLVM 13.0.0 DRM 3.42 5.15.0-051500-generic), Vulkan: 1.2.199, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0xa50000c - ACPI Profile: balanced
Graphics Notes: BAR1 / Visible vRAM Size: 512 MB
Python Notes: Python 3.9.7
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

ASUS ROG 5900HX: Linux 5.16

Processor: AMD Ryzen 9 5900HX @ 3.30GHz (8 Cores / 16 Threads), Motherboard: ASUS G513QY v1.0 (G513QY.311 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZVLQ512HBLU-00B00, Graphics: ASUS AMD Cezanne 512MB (2100/400MHz), Audio: AMD Navi 21 HDMI Audio, Monitor: LQ156M1JW25, Network: Realtek RTL8111/8168/8411 + MEDIATEK Device 7961

OS: Ubuntu 21.10, Kernel: 5.16.0-051600rc8daily20220108-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.0-devel (git-9cb9101 2022-01-08 impish-oibaf-ppa) (LLVM 13.0.0 DRM 3.44 5.16.0-051600rc8daily20220108-generic), Vulkan: 1.2.199, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise

Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0xa50000c - ACPI Profile: balanced
Graphics Notes: BAR1 / Visible vRAM Size: 512 MB
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Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: 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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Lenovo IdeaPad 4500U: Linux 5.15

Processor: AMD Ryzen 5 4500U @ 2.38GHz (6 Cores), Motherboard: LENOVO LNVNB161216 (EECN20WW BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 256GB SK hynix HFM256GDHTNI-87A0B, Graphics: AMD Renoir 512MB (1500/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Realtek RTL8822CE 802.11ac PCIe

OS: Ubuntu 21.10, Kernel: 5.15.0-051500-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.0-devel (git-9cb9101 2022-01-08 impish-oibaf-ppa) (LLVM 13.0.0 DRM 3.42 5.15.0-051500-generic), Vulkan: 1.2.199, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0x8600102 - ACPI Profile: balanced
Graphics Notes: BAR1 / Visible vRAM Size: 512 MB
Python Notes: Python 3.9.7
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Lenovo IdeaPad 4500U: Linux 5.16

Processor: AMD Ryzen 5 4500U @ 2.38GHz (6 Cores), Motherboard: LENOVO LNVNB161216 (EECN20WW BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 256GB SK hynix HFM256GDHTNI-87A0B, Graphics: AMD Renoir 512MB (1500/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Realtek RTL8822CE 802.11ac PCIe

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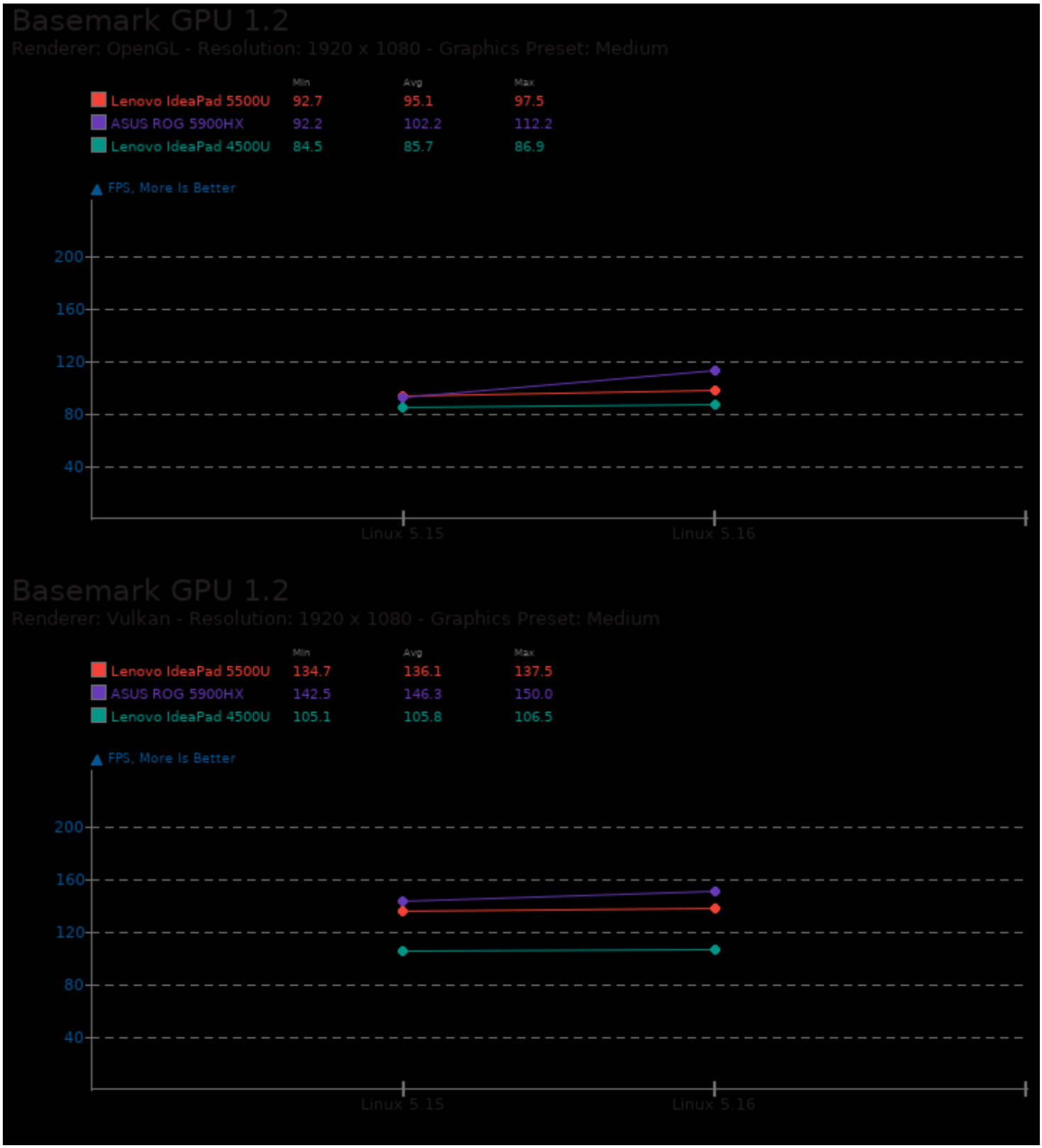
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Basemark GPU - OpenGL - 1920 x 1080 - Medium (FPS)	92.71	97.54	92.19	**112.21**	**84.51**	86.85
Normalized	82.62%	86.93%	82.16%	100%	75.31%	77.4%
Standard Deviation	1.1%	0.1%	1.4%	1.6%	1.3%	0.5%

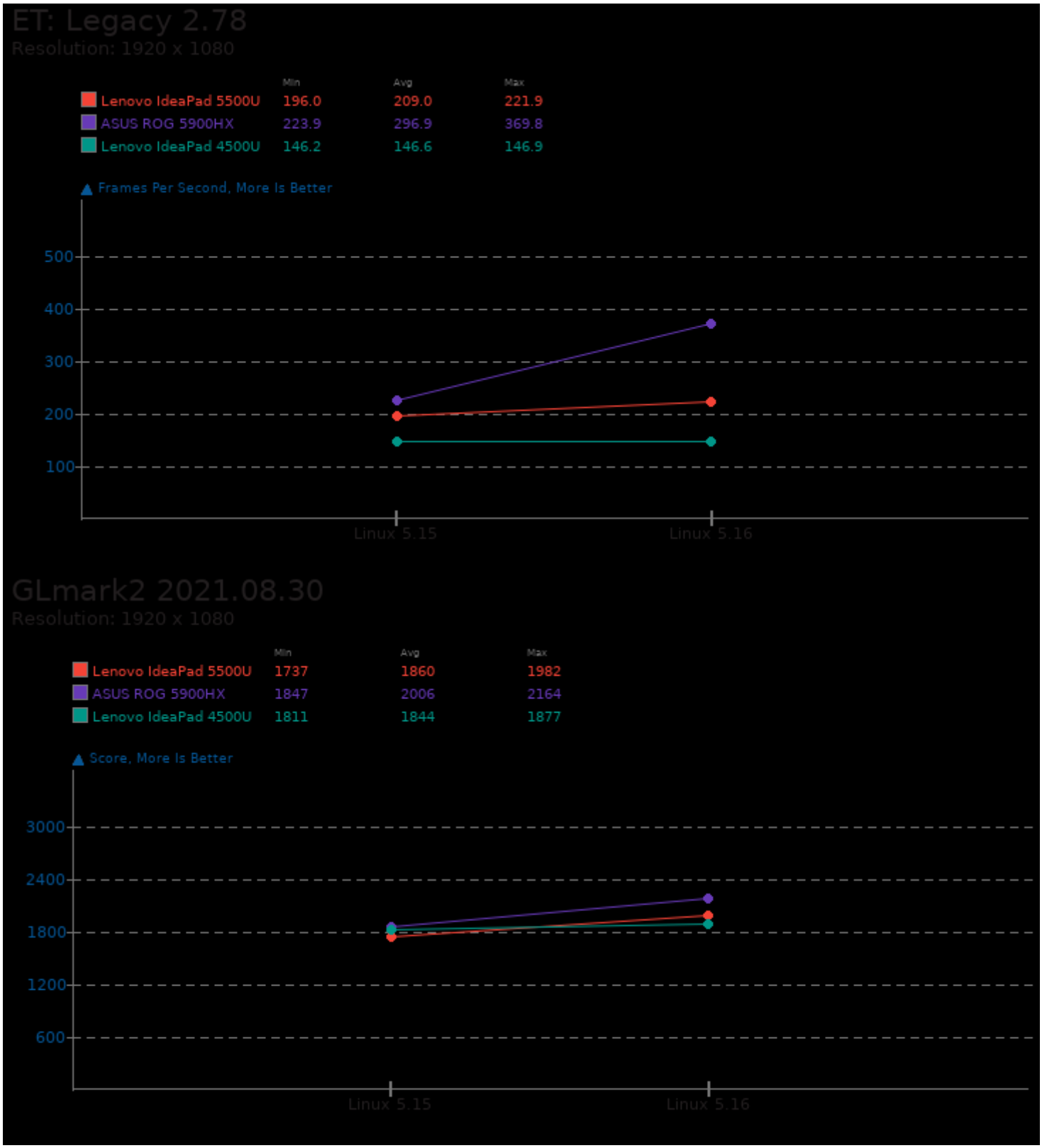
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Basemark GPU - Vulkan - 1920 x 1080 - Medium (FPS)	134.66	137.50	142.53	**150.03**	**105.07**	106.50
Normalized	89.76%	91.65%	95%	100%	70.03%	70.99%
Standard Deviation	0.2%	0.1%	0%	0.5%	1.2%	0.5%
ET: Legacy - 1920 x 1080 (FPS)	196.0	221.9	223.9	**369.8**	146.9	**146.2**
Normalized	53%	60.01%	60.55%	100%	39.72%	39.53%
Standard Deviation	0.5%	0.1%	0.7%	0.4%	2.3%	1.1%
GLmark2 - 1920 x 1080 (Score)	**1737**	1982	1847	**2164**	1811	1877
Normalized	80.27%	91.59%	85.35%	100%	83.69%	86.74%
Tesseract - 1920 x 1080	136.8041	149.9116	156.1390	**182.1543**	**95.25528**	99.24428
Normalized	75.1%	82.3%	85.72%	100%	52.29%	54.48%
Standard Deviation	0.6%	1.9%	1%	1%	2.3%	3%
Unvanquished - 1920 x 1080 - High (FPS)	166.1	184.8	208.6	**333.5**	**95.1**	109.0
Normalized	49.81%	55.41%	62.55%	100%	28.52%	32.68%
Standard Deviation	1.3%	1.8%	0.3%	0.6%	1.7%	1.3%
Unvanquished - 1920 x 1080 - Ultra (FPS)	142.3	147.2	192.5	**226.9**	**85.3**	92.6
Normalized	62.71%	64.87%	84.84%	100%	37.59%	40.81%
Standard Deviation	2.4%	2.2%	0.7%	0.6%	1.2%	1.1%
Unvanquished - 1920 x 1080 - Medium (FPS)	175.0	193.8	218.3	**345.0**	**91.9**	106.2
Normalized	50.72%	56.17%	63.28%	100%	26.64%	30.78%
Standard Deviation	2.1%	0.6%	0.4%	1.3%	2.1%	1.5%
Warsow - 1920 x 1080 (FPS)	144.2	152.4	158.5	**174.9**	120.2	**114.0**
Normalized	82.45%	87.14%	90.62%	100%	68.72%	65.18%
Standard Deviation	0.1%	0.1%	0.5%	0.5%	7.2%	6.7%
Xonotic - 1920 x 1080 - Low (FPS)	**257.7012524**	293.7648653	316.2833292	**581.9335836**	275.9103482	270.9084881
Normalized	44.28%	50.48%	54.35%	100%	47.41%	46.55%
Standard Deviation	0.8%	0.1%	0.3%	1.6%	1%	1.3%
Xonotic - 1920 x 1080 - High (FPS)	**193.0610690**	216.0213100	224.2317244	**334.4950070**	197.1602398	201.1166340
Normalized	57.72%	64.58%	67.04%	100%	58.94%	60.13%
Standard Deviation	0.2%	0.1%	0.8%	0.6%	1.3%	2.5%
Xonotic - 1920 x 1080 - Ultra (FPS)	**170.3992279**	189.0024857	200.2874033	**285.7940831**	172.3041828	176.3075121
Normalized	59.62%	66.13%	70.08%	100%	60.29%	61.69%
Standard Deviation	0.9%	0.4%	0.9%	0.8%	0.9%	1.1%
Xonotic - 1920 x 1080 - Ultimate (FPS)	138.7084496	145.7549013	168.9459355	**209.4616311**	**128.6044973**	130.1114843
Normalized	66.22%	69.59%	80.66%	100%	61.4%	62.12%
Standard Deviation	0.5%	0.3%	0.8%	1%	0.5%	1.1%

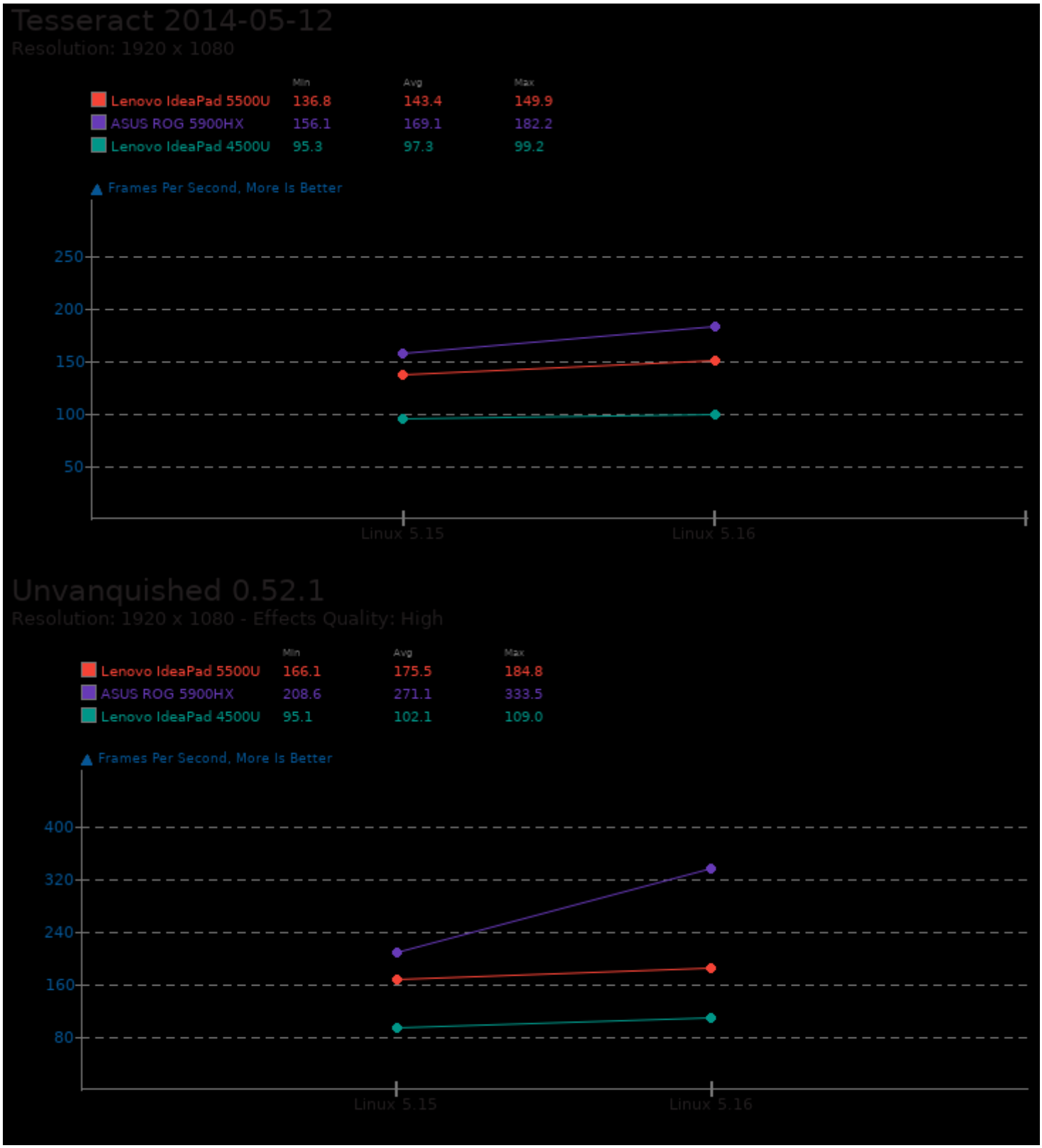
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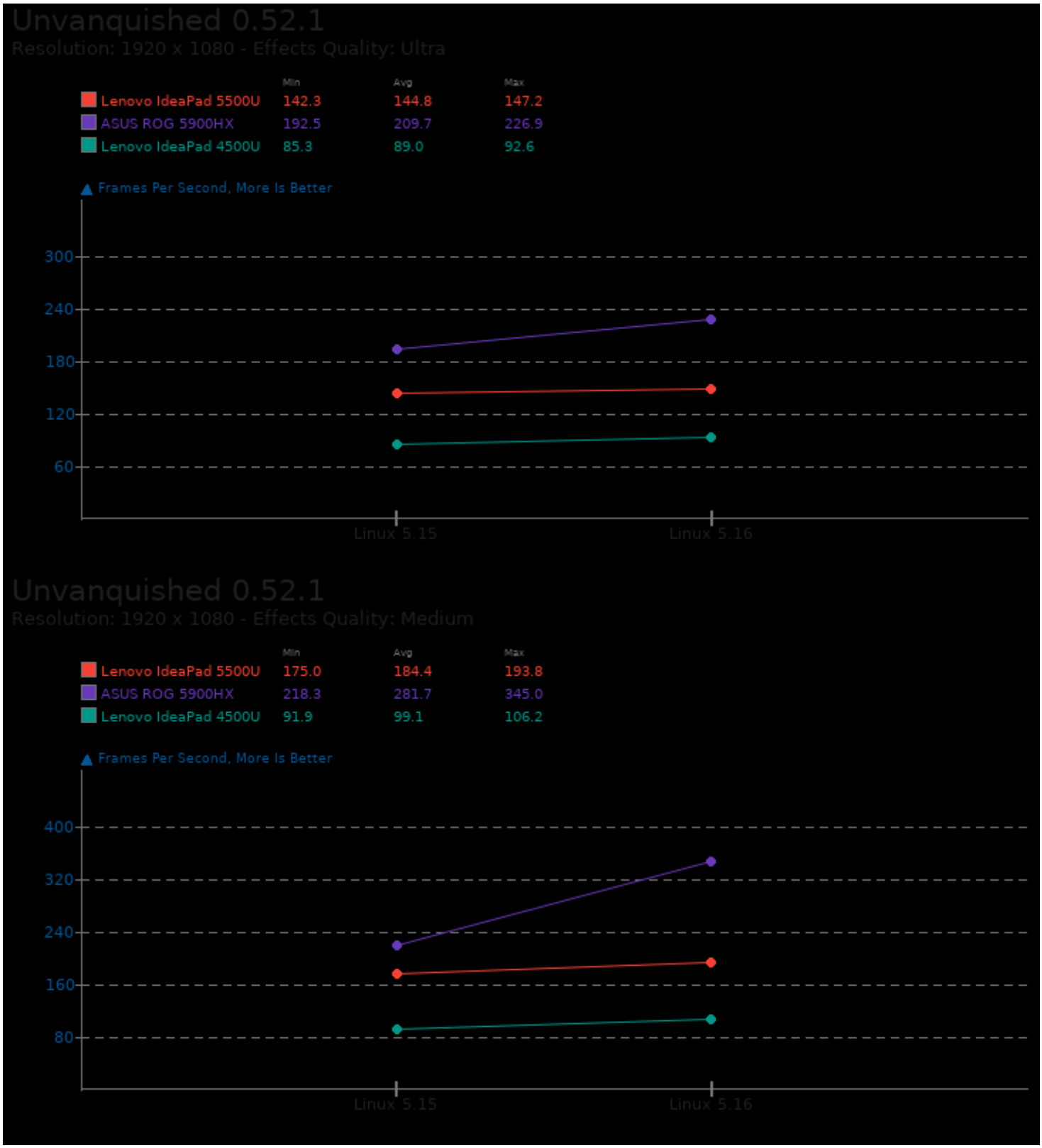
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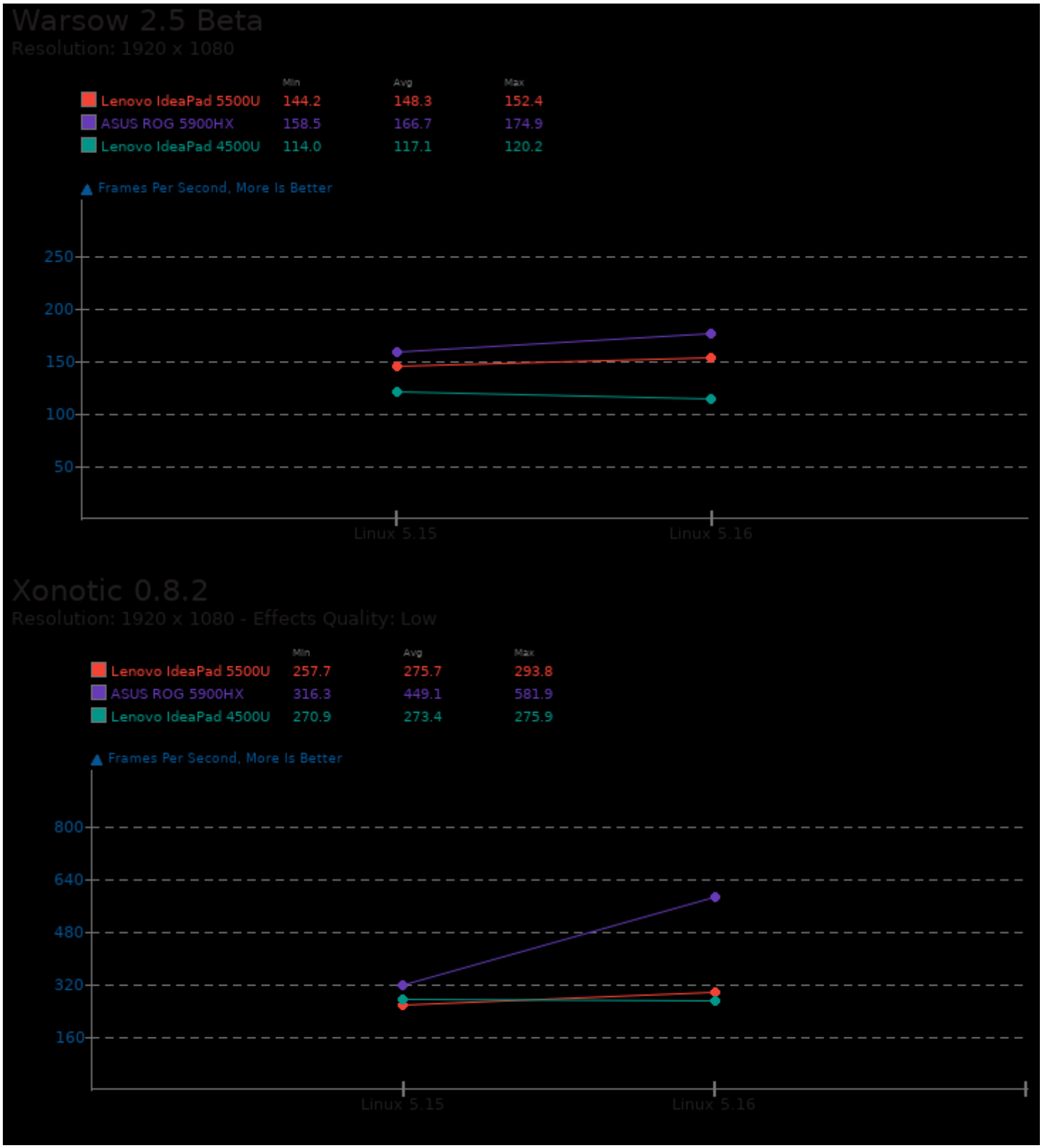
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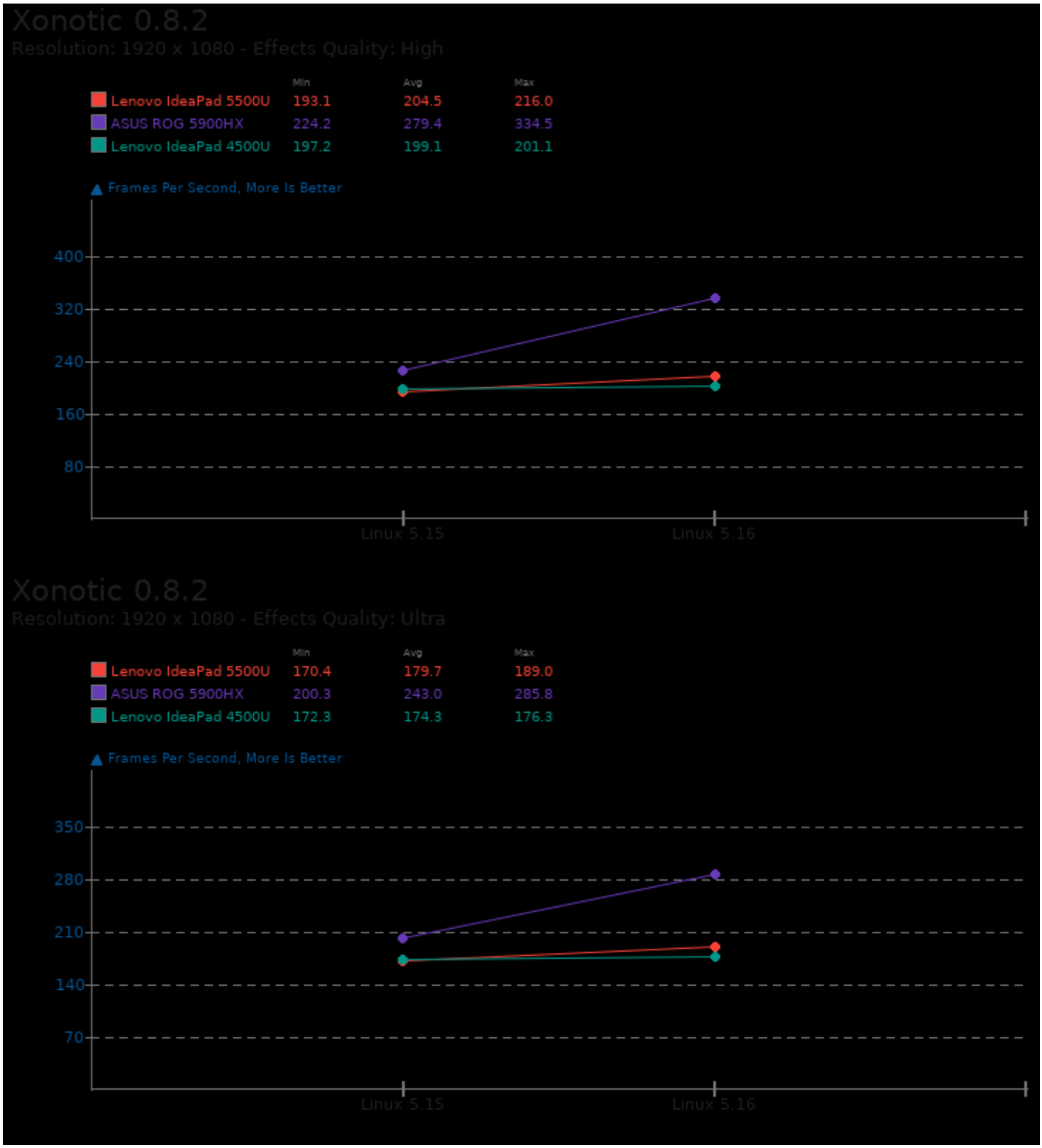
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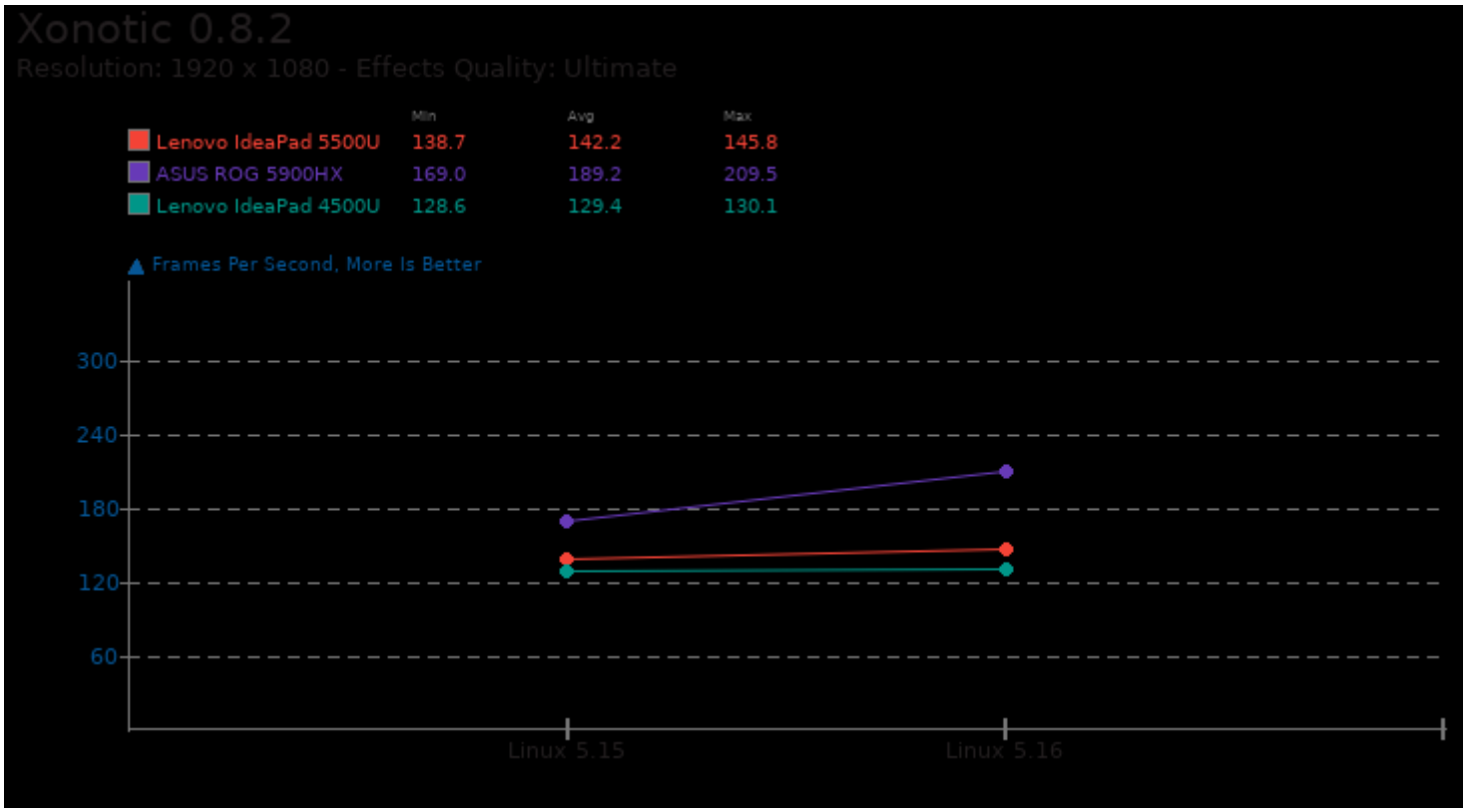
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