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helloSystem 0.8

AMD Ryzen 9 7950X 16-Core testing with a ASUS ROG CROSSHAIR X670E HERO (0805 BIOS) and AMD Radeon RX 6800 XT 16GB on EndeavourOS rolling via the Phoronix Test Suite.

Automated Executive Summary

Fedora Workstation 37 had the most wins, coming in first place for 46% of the tests.

Based on the geometric mean of all complete results, the fastest (Fedora Workstation 37) was 1.5x the speed of the slowest (helloSystem 0.8). EndeavourOS Rolling was 0.773x the speed of Fedora Workstation 37 and helloSystem 0.8 was 0.863x the speed of EndeavourOS Rolling.

The results with the greatest spread from best to worst included:

Zstd Compression (Compression Level: 19 - Compression Speed) at 24.899x
Zstd Compression (Compression Level: 19, Long Mode - Compression Speed) at 12.158x
Zstd Compression (Compression Level: 3 - Compression Speed) at 10.951x
Zstd Compression (Compression Level: 8, Long Mode - Compression Speed) at 9.203x
Zstd Compression (Compression Level: 3, Long Mode - Compression Speed) at 3.557x
RawTherapee (Total Benchmark Time) at 2.868x
PyPerformance (Benchmark: go) at 2.64x
PyPerformance (Benchmark: raytrace) at 2.63x

PyPerformance (Benchmark: 2to3) at 2.622x
PyPerformance (Benchmark: pickle_pure_python) at 2.514x.

Test Systems:

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Processor: AMD Ryzen 9 7950X 16-Core @ 4.50GHz (32 Cores), Motherboard: ASUS ROG CROSSHAIR X670E HERO, Chipset: AMD [AMD], Memory: 32GB, Disk: Generic NVMe Device, Graphics: AMD Radeon RX 6800/6800 XT / 6900 16GB, Audio: ATI (0xab28) HDA, Monitor: ASUS MG28U

OS: FreeBSD, Kernel: 13.1-RELEASE (x86_64), Display Server: X Server 1.21.1.4, Compiler: Clang 15.0.6, File-System: zfs, Screen Resolution: 3840x2160

Environment Notes: QTWEBENGINE_CHROMIUM_FLAGS="--ignore-gpu-blacklist --enable-gpu-rasterization --enable-native-gpu-buffers"
Java Notes: OpenJDK Runtime Environment (build 11.0.17+8-1)
Python Notes: Python 3.9.16

Fedora Workstation 37

Processor: AMD Ryzen 9 7950X 16-Core @ 4.50GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: 2048GB SOLIDIGM SSDPFKKW020X7 + 257GB Flash Drive, Graphics: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: AMD Navi 21/23, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Fedora Linux 37, Kernel: 6.1.6-200.fc37.x86_64 (x86_64), Desktop: GNOME Shell 43.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.3.3 (LLVM 15.0.6 DRM 3.49), Compiler: GCC 12.2.1 20221121, File-System: btrfs, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,objc,obj-c++,ada,go,d,lto --enable-libstdcxx-backtrace --enable-link-serialization=1 --enable-multilib --enable-offload-defaulted --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-build-config=bootstrap-lto --with-gcc-major-version-only --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Disk Notes: NONE / compress=zstd:1,relatime,rw,seclabel,space_cache=v2,ssd,subvol=/home,subvolid=256 / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa601203
Java Notes: OpenJDK Runtime Environment (Red_Hat-17.0.5.0.8-1.fc37) (build 17.0.5+8)
Python Notes: Python 3.11.1
Security Notes: SELinux + 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

EndeavourOS Rolling

Processor: AMD Ryzen 9 7950X 16-Core @ 4.50GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: 2048GB SOLIDIGM SSDPFKKW020X7 + 257GB Flash Drive, Graphics: AMD Radeon RX 6800 XT 16GB (2575/1000MHz), Audio: AMD Navi 21/23, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: EndeavourOS rolling, Kernel: 6.1.7-arch1-1 (x86_64), Desktop: KDE Plasma 5.26.5, Display Server: X Server 1.21.1.6, OpenGL: 4.6 Mesa 22.3.3 (LLVM 15.0.7 DRM 3.49), Compiler: GCC 12.2.1 20230111 + Clang 15.0.7,

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File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet=auto --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-default-ssp --enable-gnu-indirect-function --enable-gnu-unique-object --enable-languages=c,c++,ada,fortran,go,lto,objc,obj-c++,d --enable-libstdcxx-backtrace --enable-link-serialization=1 --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-build-config=bootstrap-lto --with-linker-hash-style=gnu
Disk Notes: NONE / noatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa601203
Java Notes: OpenJDK Runtime Environment (build 11.0.18+10)
Python Notes: Python 3.10.9
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

	helloSystem 0.8	Fedora Workstation	EndeavourOS Rolling
Zstd Compression - 3 - Compression Speed (MB/s)	6926	5609	632.4
Normalized	100%	80.99%	9.13%
Standard Deviation	0.4%	0.7%	2.1%
Zstd Compression - 3 - D.S (MB/s)	5590	5813	6183
Normalized	90.4%	94.01%	100%
Standard Deviation	0.1%	0.8%	0.7%
Zstd Compression - 8 - Compression Speed (MB/s)	979.6	1000	32.3
Normalized	97.93%	100%	3.23%
Standard Deviation	3.8%	4.9%	13.5%
Zstd Compression - 8 - D.S (MB/s)	5859	6186	6416
Normalized	91.32%	96.42%	100%
Standard Deviation	0.7%	1.5%	1.1%
Zstd Compression - 19 - Compression Speed (MB/s)	80.6	85.9	3.45
Normalized	93.83%	100%	4.02%
Standard Deviation	0.4%	0.3%	0.6%
Zstd Compression - 19 - D.S (MB/s)	5090	5236	5376
Normalized	94.69%	97.41%	100%
Standard Deviation	0.4%	2.4%	0.3%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	1522	1135	428.0
Normalized	100%	74.58%	28.11%
Standard Deviation	0.8%	0.5%	0.9%
Zstd Compression - 3, Long Mode - D.S	6048	6364	6563
Normalized	92.15%	96.98%	100%
Standard Deviation	0.7%	2.8%	0.6%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	1348	1210	146.5
Normalized	100%	89.76%	10.87%
Standard Deviation	0.6%	0.8%	0.4%
Zstd Compression - 8, Long Mode - D.S	6326	6562	6896
Normalized	91.73%	95.16%	100%
Standard Deviation	1%	0.1%	0.4%

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Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	47.5	**52.4**	**4.31**
Normalized	90.65%	100%	8.23%
Standard Deviation	2.2%	1.1%	0.2%
Zstd Compression - 19, Long Mode - D.S (MB/s)	**5231**	5251	**5433**
Normalized	96.28%	96.65%	100%
Standard Deviation	0.4%	0.7%	0.7%
Node.js V8 Web Tooling Benchmark (runs/s)	**19.31**	20.59	**20.97**
Normalized	92.08%	98.19%	100%
Standard Deviation	4.7%	1.7%	1.6%
Numpy Benchmark (Score)	**841.75**	881.19	**968.09**
Normalized	86.95%	91.02%	100%
Standard Deviation	0.8%	0.4%	0.3%
PHPBench - P.B.S (Score)	**718400**	**1223393**	982381
Normalized	58.72%	100%	80.3%
Standard Deviation	2.5%	1.2%	0.1%
OpenSSL (sign/s)	**6098**	6107	**6112**
Normalized	99.76%	99.91%	100%
Standard Deviation	0.2%	0.3%	0.1%
OpenSSL (verify/s)	**396721**	398794	**399524**
Normalized	99.3%	99.82%	100%
Standard Deviation	0.1%	0.1%	0.1%
PyBench - T.F.A.T.T (Milliseconds)	**811**	644	**614**
Normalized	75.71%	95.34%	100%
Standard Deviation	1.7%	0.5%	0.2%
PyPerformance - go (Milliseconds)	**240**	**90.9**	124
Normalized	37.88%	100%	73.31%
Standard Deviation	0.6%	0.6%	0.5%
PyPerformance - 2to3 (Milliseconds)	**388**	**148**	163
Normalized	38.14%	100%	90.8%
Standard Deviation	0.9%	0.4%	0.4%
PyPerformance - chaos (Milliseconds)	**104**	**43.4**	53.0
Normalized	41.73%	100%	81.89%
Standard Deviation	2.4%	2.3%	0.7%
PyPerformance - float (Milliseconds)	**111**	**46.2**	56.3
Normalized	41.62%	100%	82.06%
Standard Deviation	2.4%	2.4%	0.3%
PyPerformance - nbody (Milliseconds)	**141**	**66.7**	81.9
Normalized	47.3%	100%	81.44%
Standard Deviation	1.5%	1.9%	2.5%
PyPerformance - pathlib (Milliseconds)	**16.9**	9.68	**9.53**
Normalized	56.39%	98.45%	100%
Standard Deviation	2.2%	0.8%	0.3%
PyPerformance - raytrace (Milliseconds)	**497**	**189**	253
Normalized	38.03%	100%	74.7%
Standard Deviation	3.5%	2.2%	0.2%
PyPerformance - json_loads (Milliseconds)	**19.4**	**11.9**	12
Normalized	61.34%	100%	99.17%
Standard Deviation	2.5%	0.5%	0%
PyPerformance - crypto_pyaes	**105**	**45.0**	61.3
Normalized	42.86%	100%	73.41%
Standard Deviation	3.1%	0.3%	0.4%
PyPerformance - regex_compile	**142**	**72.0**	79.5
Normalized	50.7%	100%	90.57%

Standard Deviation	2.4%	0.3%	0.1%
PyPerformance - python_startup	**7.12**	**4.51**	5.14
Normalized	63.34%	100%	87.74%
Standard Deviation	0.1%	0%	0.2%
PyPerformance - django_template (Milliseconds)	**46.3**	**21.7**	24.9
Normalized	46.87%	100%	87.15%
Standard Deviation	2.3%	1%	0.2%
PyPerformance - pickle_pure_python (Milliseconds)	**455**	**181**	225
Normalized	39.78%	100%	80.44%
Standard Deviation	3.3%	0.6%	0.3%
Renaissance - Scala Dotty (ms)	476.3	**492.6**	**455.5**
Normalized	95.63%	92.47%	100%
Standard Deviation	4.9%	6.5%	6.9%
Renaissance - Savina Reactors.IO (ms)	**5754**	**3342**	4085
Normalized	58.08%	100%	81.8%
Standard Deviation	2.2%	0.6%	0.5%
Renaissance - F.H.R (ms)	**2586**	**2130**	2302
Normalized	82.34%	100%	92.51%
Standard Deviation	1.8%	0.4%	0.9%
Renaissance - A.U.C.T (ms)	**12349**	**7960**	8945
Normalized	64.46%	100%	88.98%
Standard Deviation	2.4%	1%	2.3%
Renaissance - G.A.U.J.F (ms)	**1400**	1707	**1773**
Normalized	100%	82.02%	78.95%
Standard Deviation	3.8%	1%	2.4%
DaCapo Benchmark - H2 (msec)	**3288**	**1970**	2139
Normalized	59.91%	100%	92.1%
Standard Deviation	20.2%	6.6%	2.3%
DaCapo Benchmark - Jython (msec)	**2867**	2298	**2219**
Normalized	77.4%	96.56%	100%
Standard Deviation	15.4%	1.1%	1.3%
Darktable - Boat - CPU-only (sec)	2.082		
Standard Deviation	2.9%		
Darktable - Masskrug - CPU-only (sec)	2.361		
Standard Deviation	2.3%		
Darktable - Server Rack - CPU-only (sec)	0.208		
Standard Deviation	2.1%		
Darktable - Server Room - CPU-only (sec)	1.818		
Standard Deviation	0.9%		
GEGL - Crop (sec)	**8.452**	**4.553**	5.010
Normalized	53.87%	100%	90.88%
Standard Deviation	9.4%	0.7%	0.4%
GEGL - Scale (sec)	**9.329**	**5.054**	5.167
Normalized	54.18%	100%	97.81%
Standard Deviation	10.7%	0.5%	2.1%
GEGL - Cartoon (sec)	**94.311**	61.127	**59.805**
Normalized	63.41%	97.84%	100%
Standard Deviation	1%	0.3%	0.5%
GEGL - Reflect (sec)	**21.156**	**19.260**	20.250
Normalized	91.04%	100%	95.11%
Standard Deviation	3.1%	2.3%	0.8%
GEGL - Antialias (sec)	**37.075**	**23.406**	24.240
Normalized	63.13%	100%	96.56%

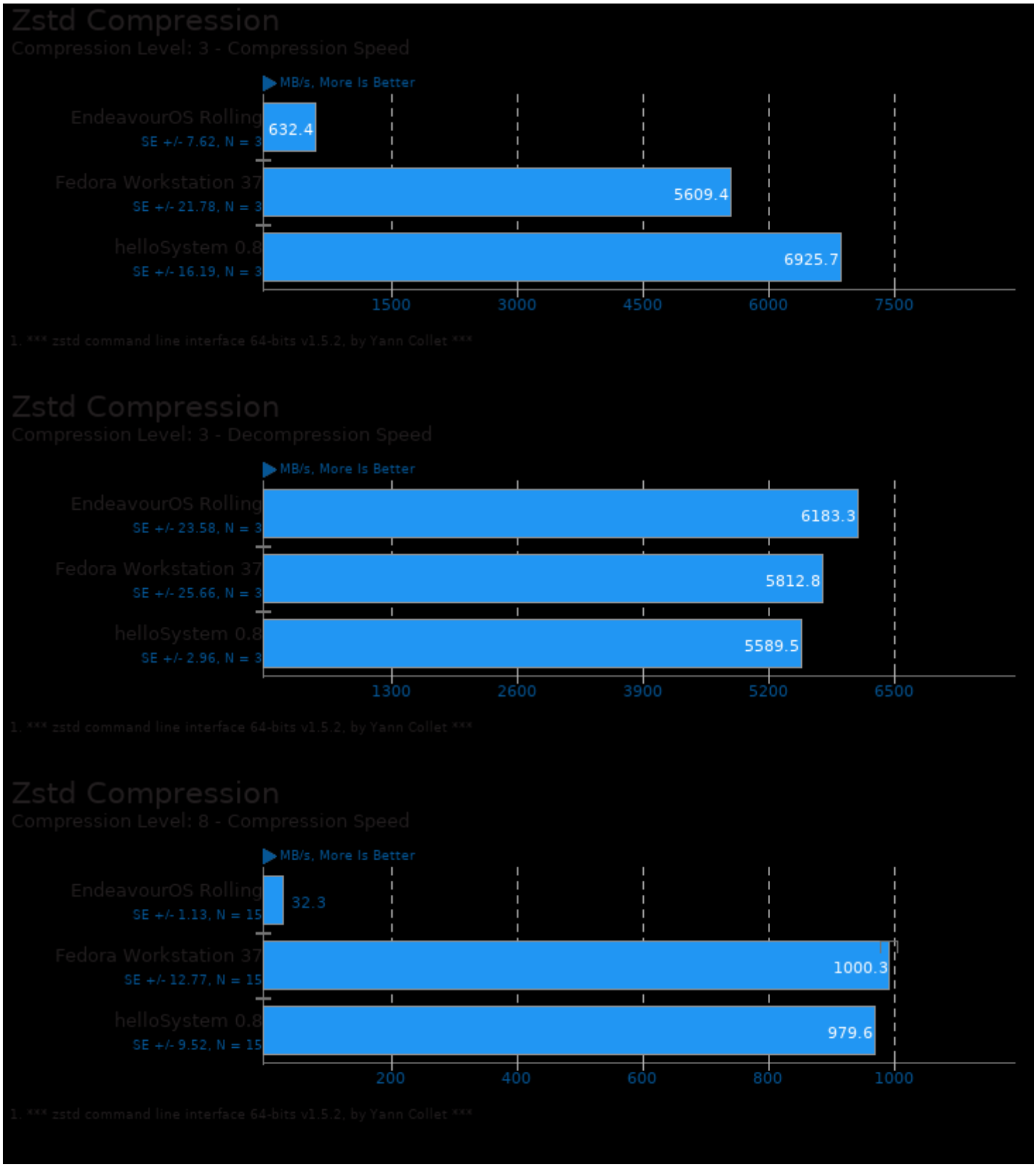
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Standard Deviation	1.5%	0.2%	0.3%
GEGL - Tile Glass (sec)	**31.275**	**18.315**	19.478
Normalized	58.56%	100%	94.03%
Standard Deviation	4.7%	0.2%	0.2%
GEGL - Wavelet Blur (sec)	**57.243**	**37.715**	38.349
Normalized	65.89%	100%	98.35%
Standard Deviation	3.9%	0.6%	0.7%
GEGL - Color Enhance (sec)	**37.114**	**31.501**	32.252
Normalized	84.88%	100%	97.67%
Standard Deviation	2.1%	0.4%	0.8%
GEGL - Rotate 90 Degrees (sec)	**43.619**	**33.415**	33.594
Normalized	76.61%	100%	99.47%
Standard Deviation	2.7%	1%	0.4%
Hugin - P.P.A.S.T (sec)	**63.202**	28.104	**27.119**
Normalized	42.91%	96.5%	100%
Standard Deviation	2.5%	1.2%	0.6%
Inkscape - SVG Files To PNG (sec)	**31.691**	**16.977**	17.904
Normalized	53.57%	100%	94.82%
Standard Deviation	1.7%	0.4%	0%
LibreOffice - 2.D.T.P (sec)	**5.324**	3.909	**3.305**
Normalized	62.08%	84.55%	100%
Standard Deviation	4.6%	2.1%	1.8%
OpenSCAD - Pistol (sec)	**41.534**	47.675	**48.907**
Normalized	100%	87.12%	84.92%
Standard Deviation	3.9%	1.7%	1%
OpenSCAD - Retro Car (sec)	**2.066**	2.112	**2.164**
Normalized	100%	97.82%	95.47%
Standard Deviation	2.6%	2.3%	0.1%
OpenSCAD - Mini-ITX Case (sec)	**21.870**	23.198	**27.639**
Normalized	100%	94.28%	79.13%
Standard Deviation	7.3%	1.6%	0.4%
OpenSCAD - L.P.C.S (sec)	**14.273**	14.710	**15.269**
Normalized	100%	97.03%	93.48%
Standard Deviation	9.5%	2.3%	0.8%
RawTherapee - T.B.T (sec)	**95.989**	**33.464**	
Normalized	34.86%	100%	
Standard Deviation	0.8%	0.1%	
Blender - BMW27 - CPU-Only (sec)	50.33	**53.49**	**48.88**
Normalized	97.12%	91.38%	100%
Standard Deviation	0.1%	0.3%	0.4%
Blender - Classroom - CPU-Only (sec)	100.57	**108.12**	**95.59**
Normalized	95.05%	88.41%	100%
Standard Deviation	0.3%	0.3%	0.1%
Blender - Fishy Cat - CPU-Only (sec)	63.85	**70.35**	**59.39**
Normalized	93.01%	84.42%	100%
Standard Deviation	0.3%	0.2%	0.6%
Blender - Barbershop - CPU-Only (sec)	456.83	**493.82**	**451.16**
Normalized	98.76%	91.36%	100%
Standard Deviation	0.3%	0.3%	0.1%
Blender - Pabellon Barcelona - CPU-Only	139.68	**152.49**	**133.27**
Normalized	95.41%	87.4%	100%
Standard Deviation	0.3%	0.3%	0.3%
Git - T.T.C.C.G.C (sec)	**35.960**	31.675	**31.206**
Normalized	86.78%	98.52%	100%
Standard Deviation	0.6%	2.1%	0.4%

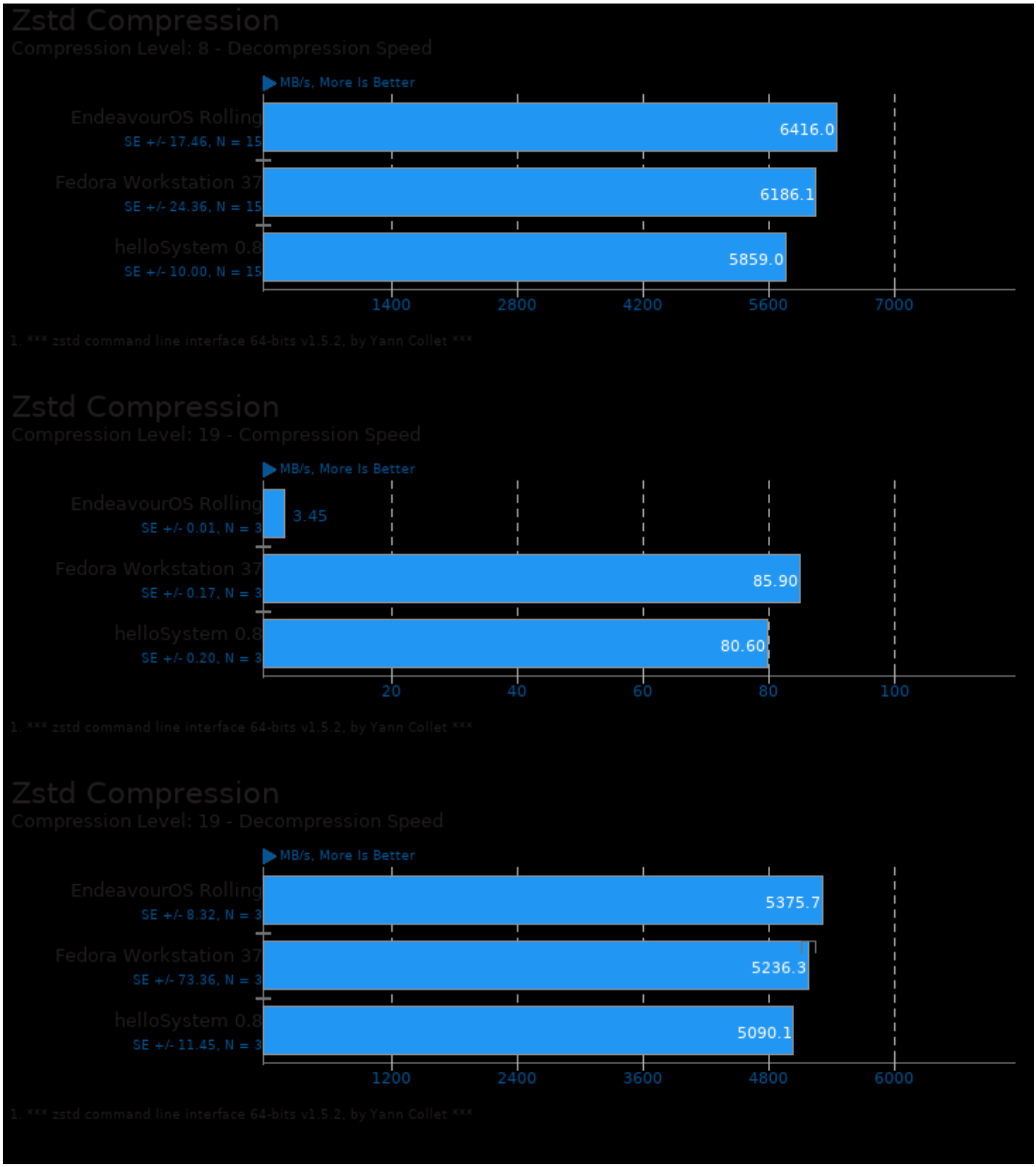
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SQLite - T.S.I (sec)	12.023	
Standard Deviation	0.4%	
Darktable - Boat - CPU-only (sec)	**2.333**	**2.284**
Normalized	96.66%	98.73%
Standard Deviation	2.4%	0.6%
Darktable - Masskrug - CPU-only (sec)	**2.678**	**2.480**
Normalized	92.42%	99.8%
Standard Deviation	0.2%	0.7%
Darktable - Server Rack - CPU-only (sec)	**0.153**	**0.161**
Normalized	100%	95.03%
Standard Deviation	1.5%	0.7%
Darktable - Server Room - CPU-only (sec)	**2.332**	**2.194**
Normalized	93.78%	99.68%
Standard Deviation	0.5%	0.6%
SQLite - T.S.I (sec)		**7.000**
Normalized		100%
Standard Deviation		0.2%

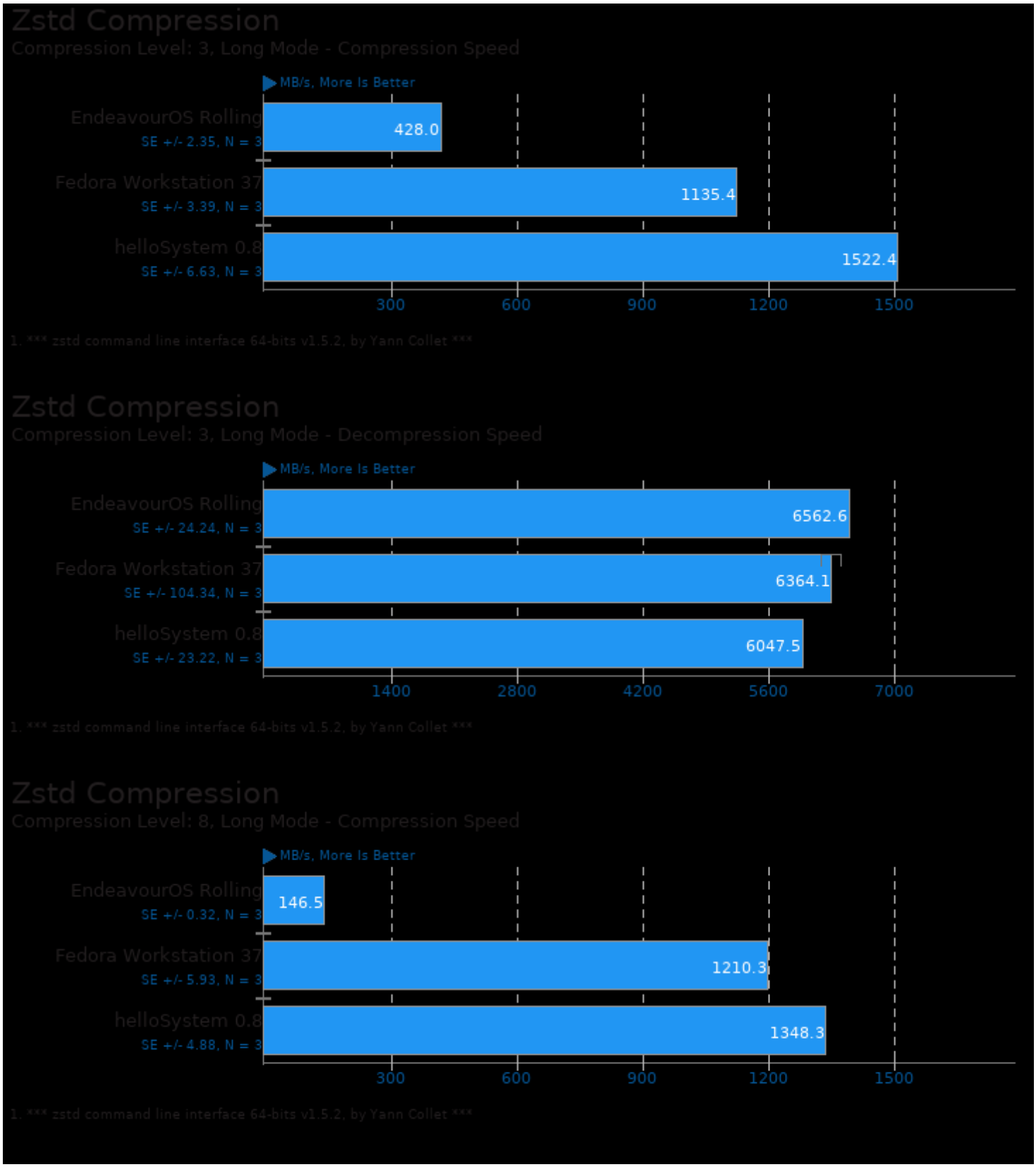
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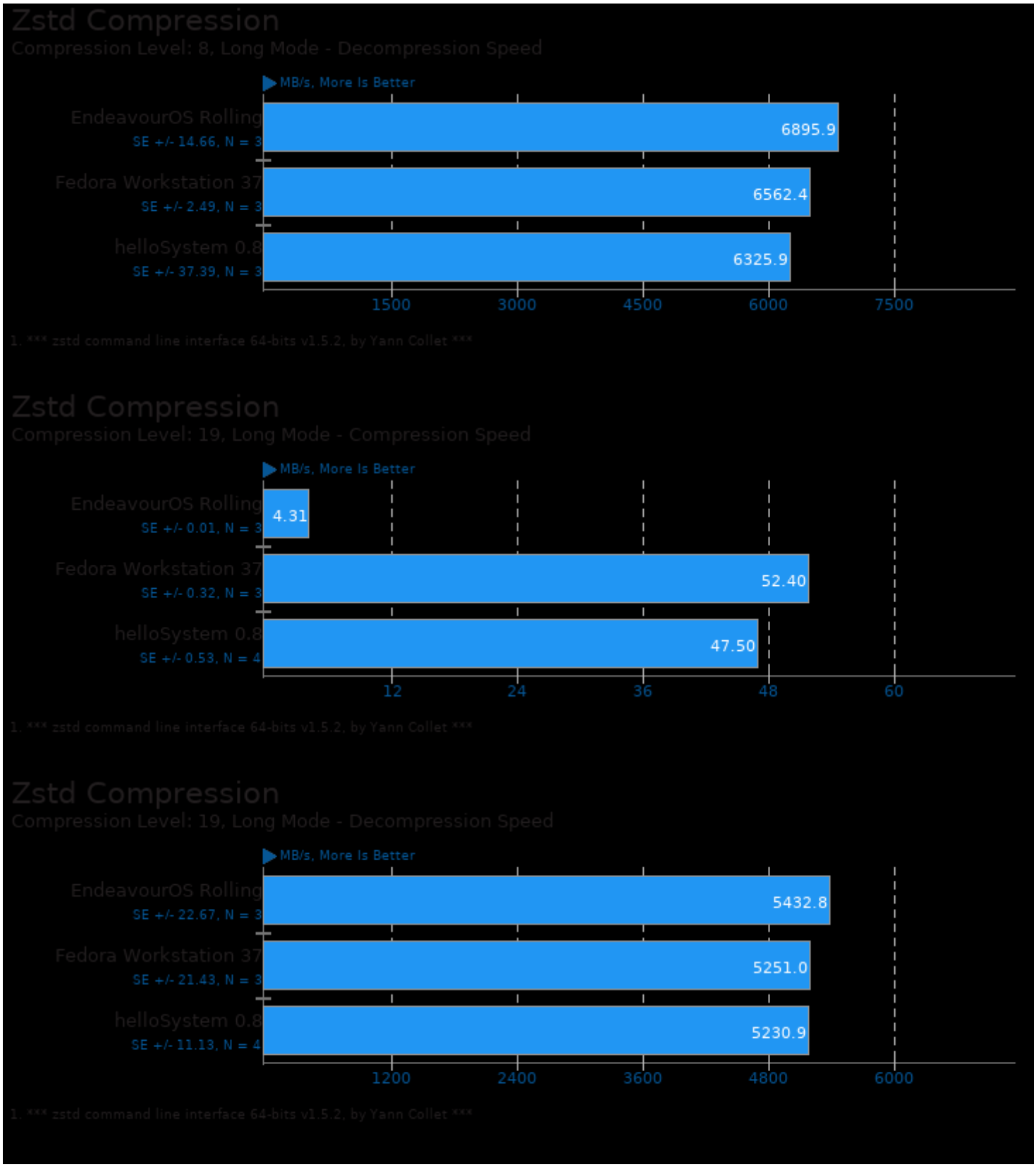


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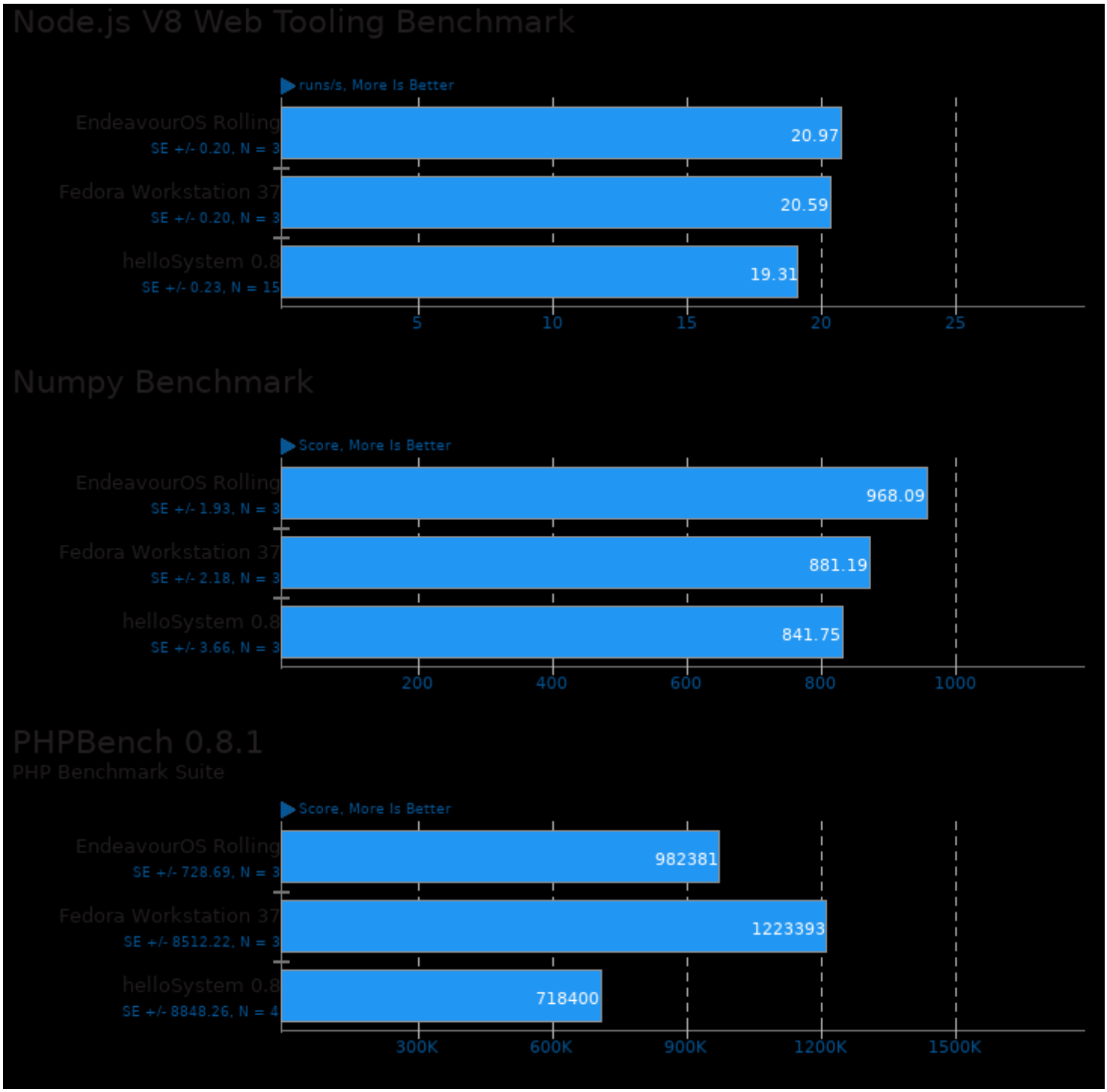


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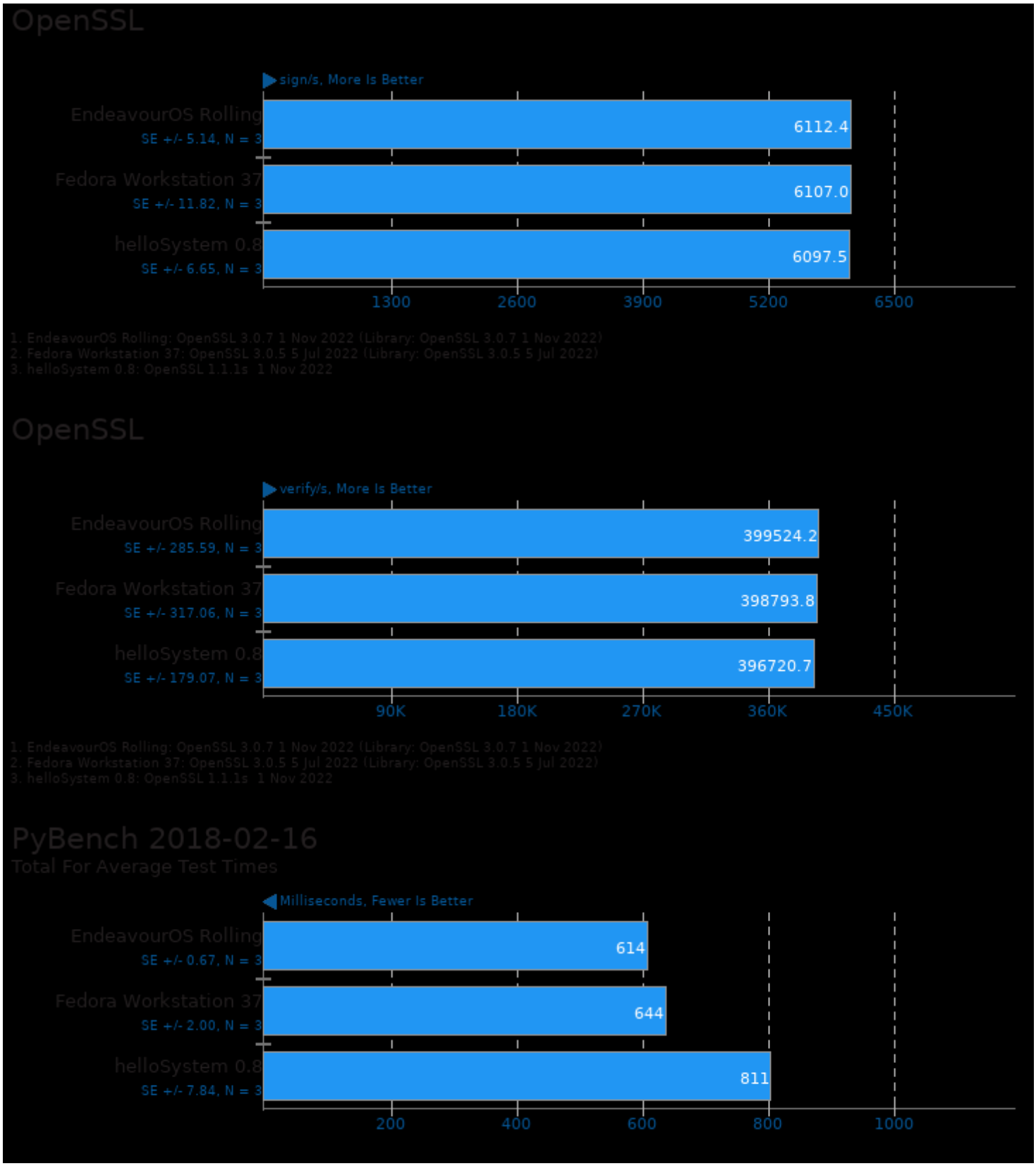



Zstd Compression
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
EndeavourOS Rolling
SE +/- 14.66, N = 3
6895.9
Fedora Workstation 37
SE +/- 2.49, N = 3
6562.4
helloSystem 0.8
SE +/- 37.39, N = 3
6325.9
1500
3000
4500
6000
7500
1. *** zstd command line interface 64-bits v1.5.2, by Yann Collet ***
Zstd Compression
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
EndeavourOS Rolling
SE +/- 0.01, N = 3
4.31
Fedora Workstation 37
SE +/- 0.32, N = 3
52.40
helloSystem 0.8
SE +/- 0.53, N = 4
47.50
12
24
36
48
60
1. *** zstd command line interface 64-bits v1.5.2, by Yann Collet ***
Zstd Compression
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
EndeavourOS Rolling
SE +/- 22.67, N = 3
5432.8
Fedora Workstation 37
SE +/- 21.43, N = 3
5251.0
helloSystem 0.8
SE +/- 11.13, N = 4
5230.9
1200
2400
3600
4800
6000
1. *** zstd command line interface 64-bits v1.5.2, by Yann Collet ***

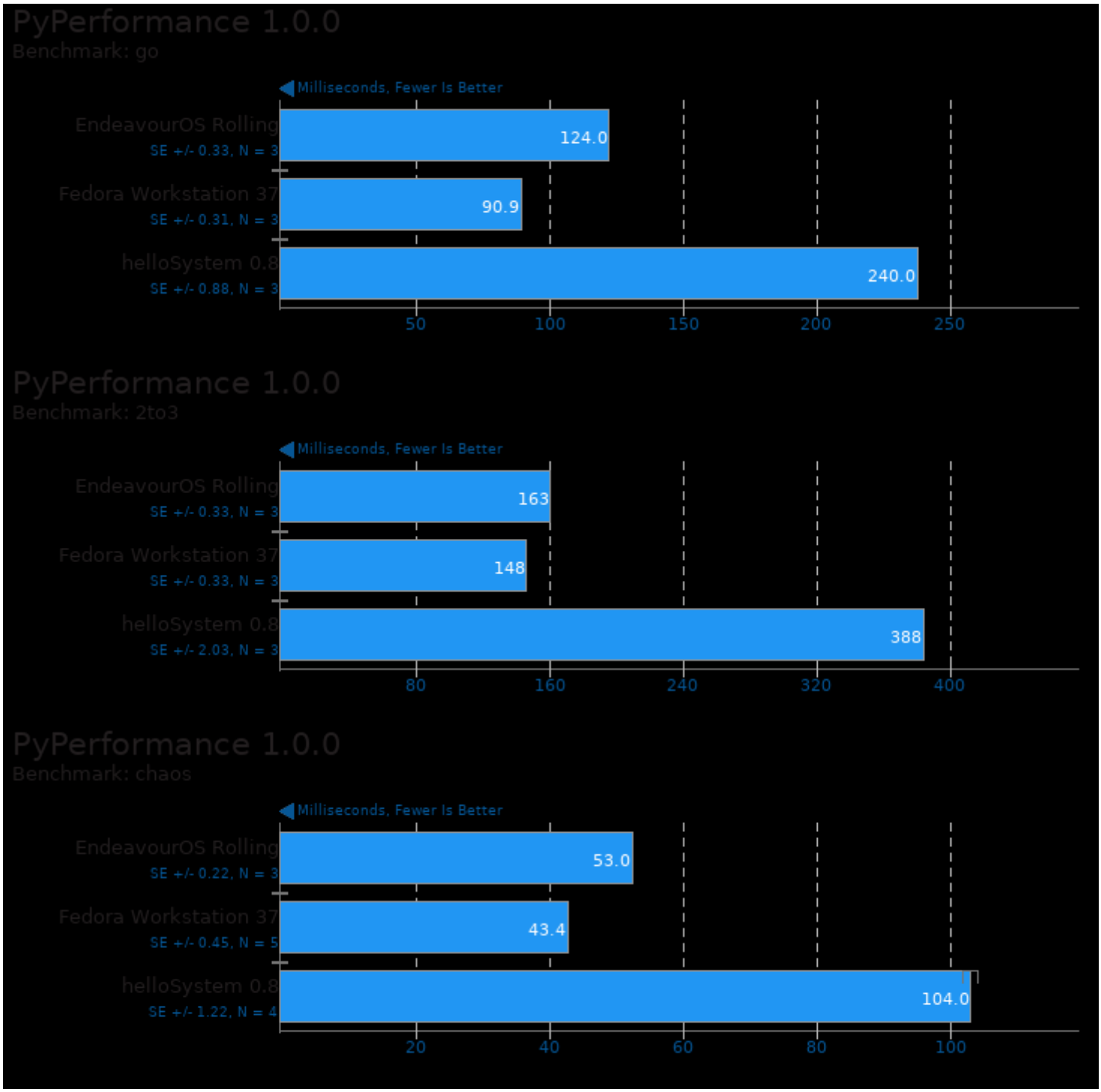
helloSystem 0.8



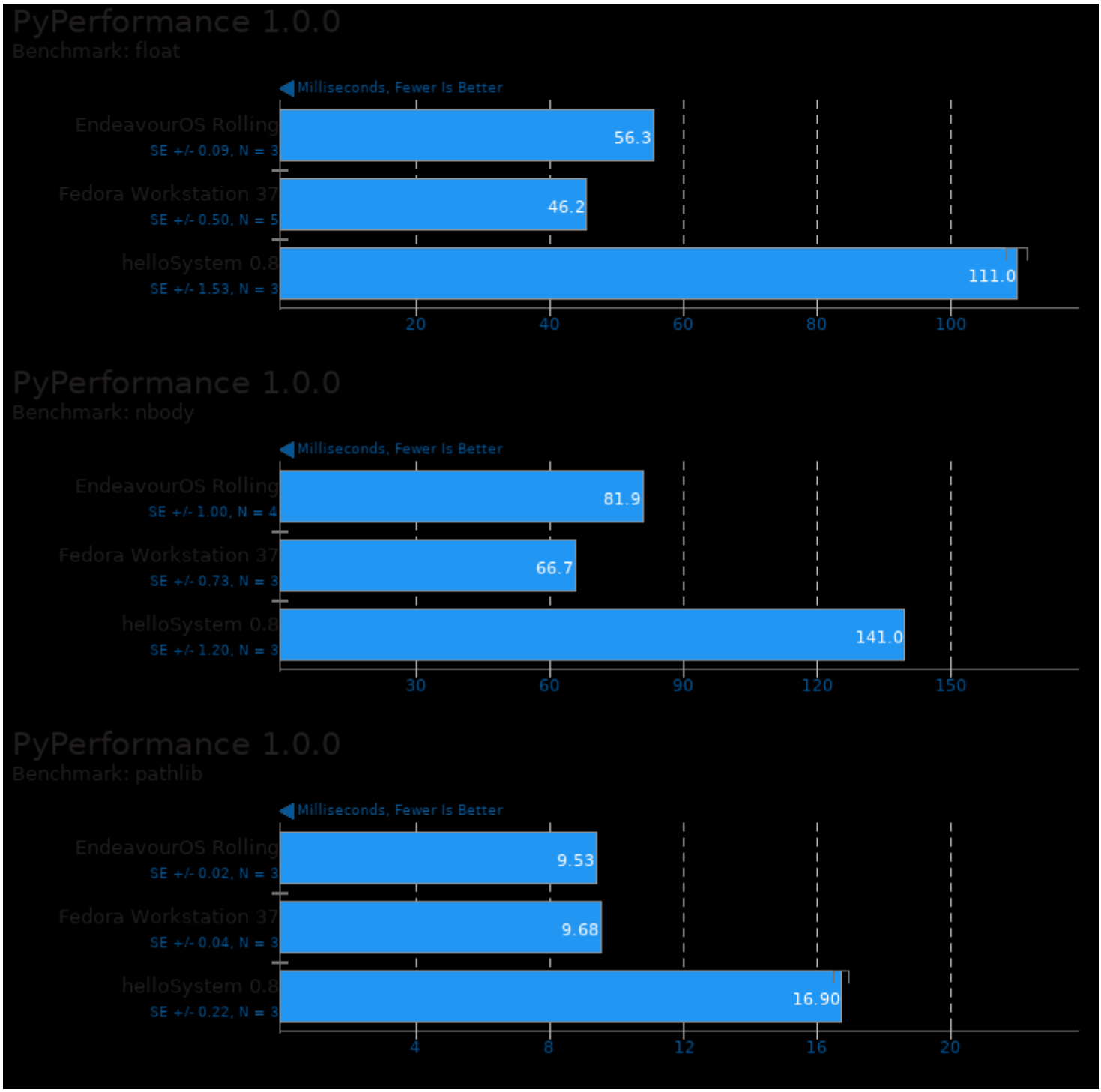
helloSystem 0.8



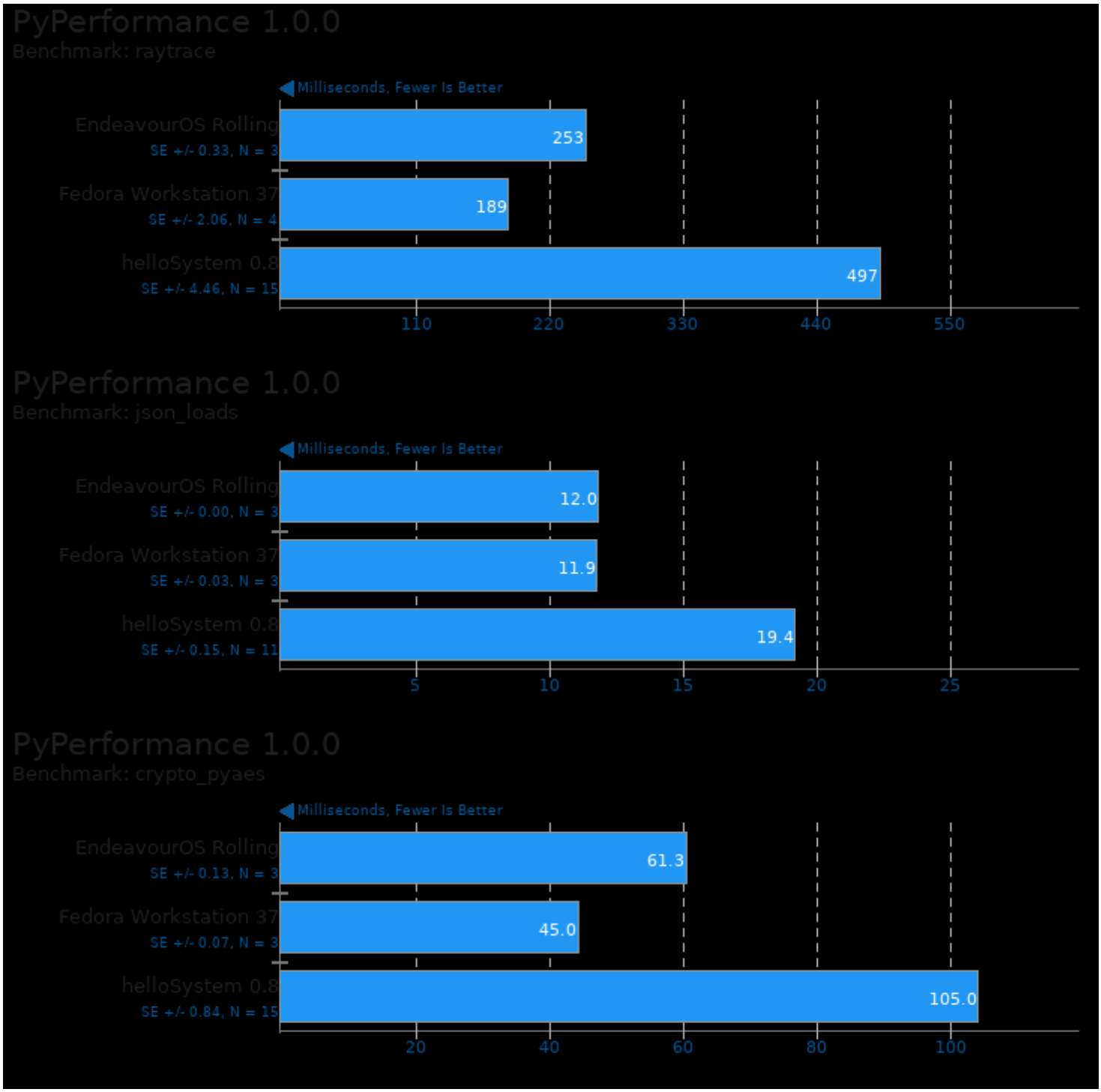
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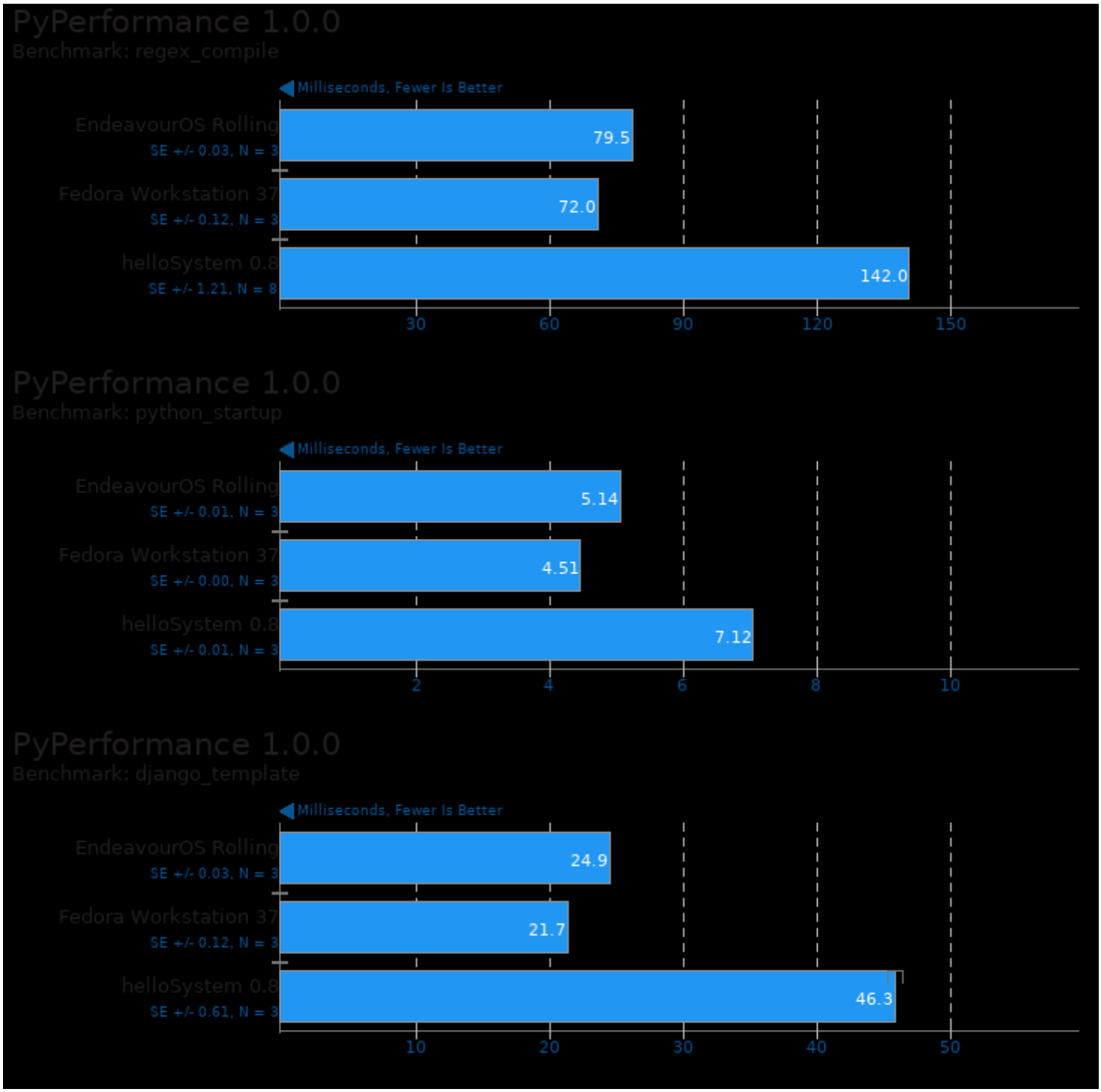
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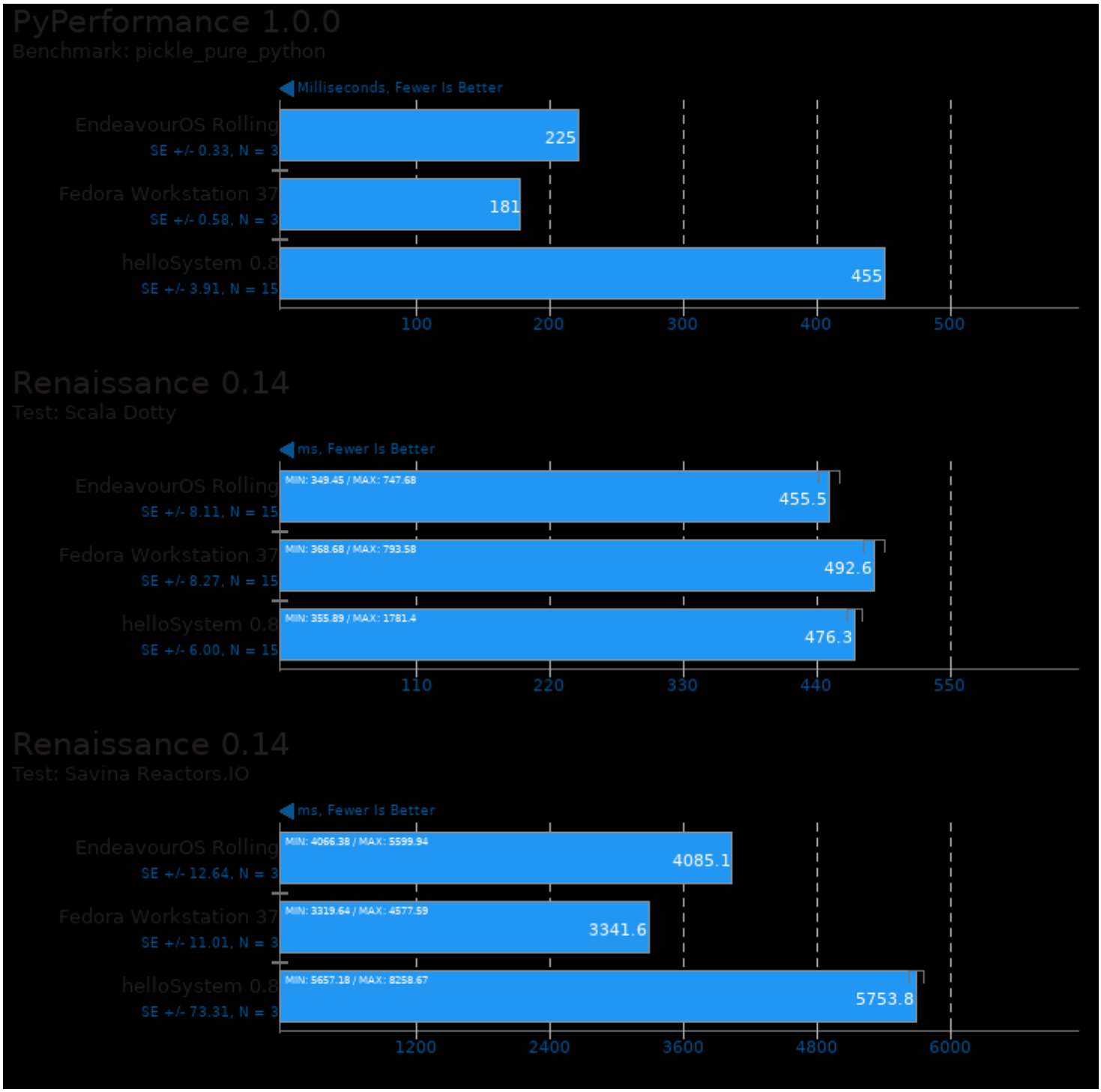
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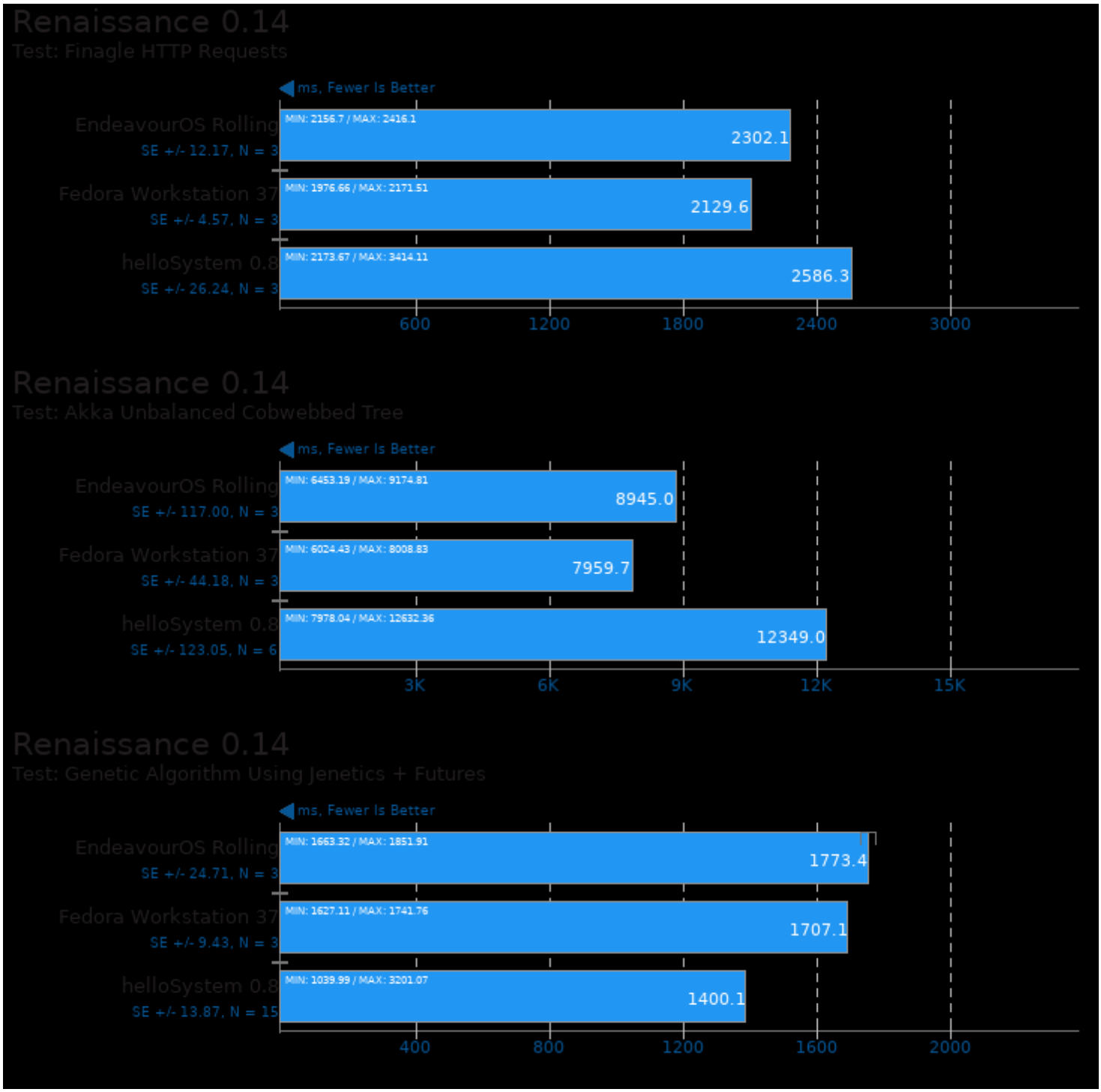
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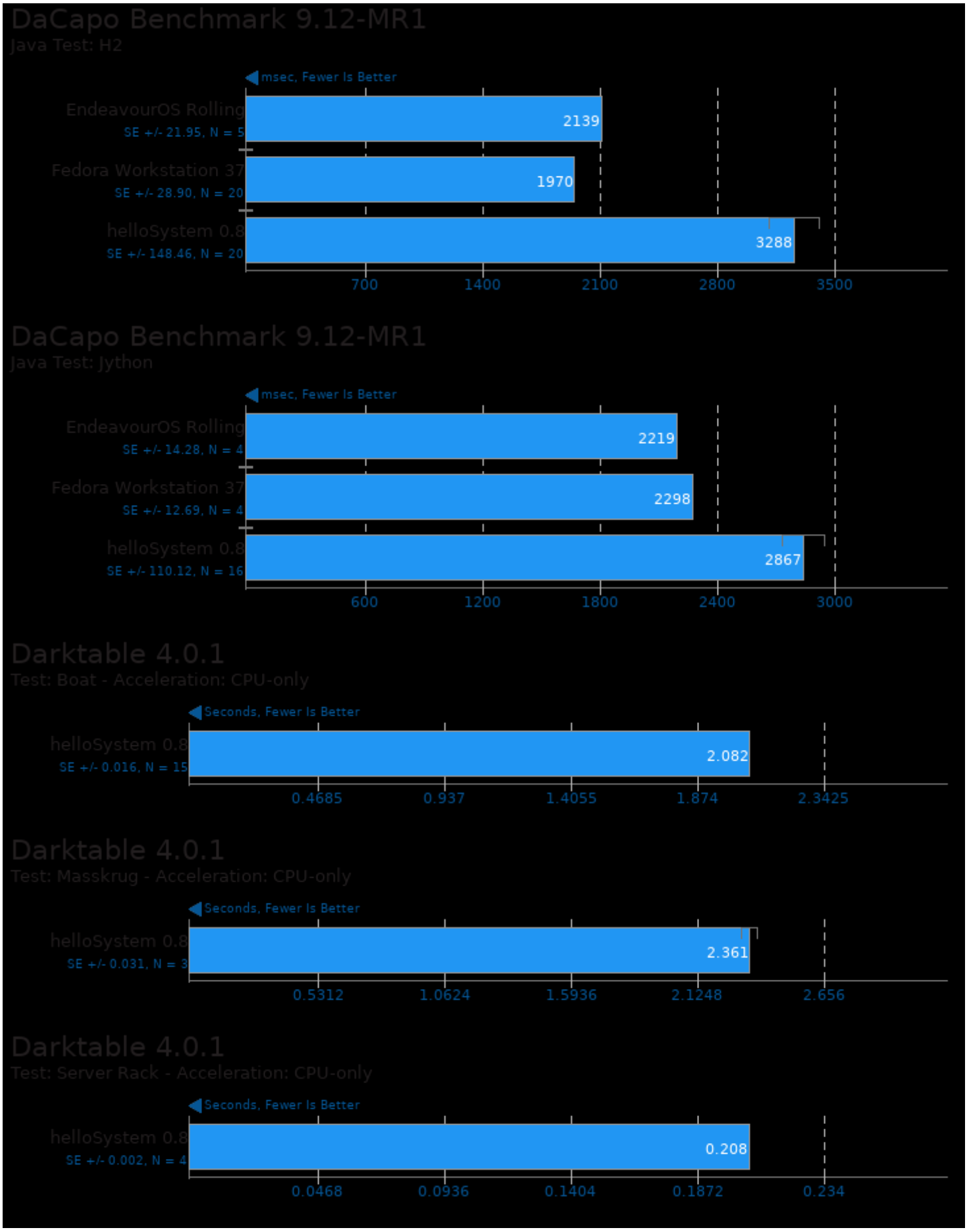
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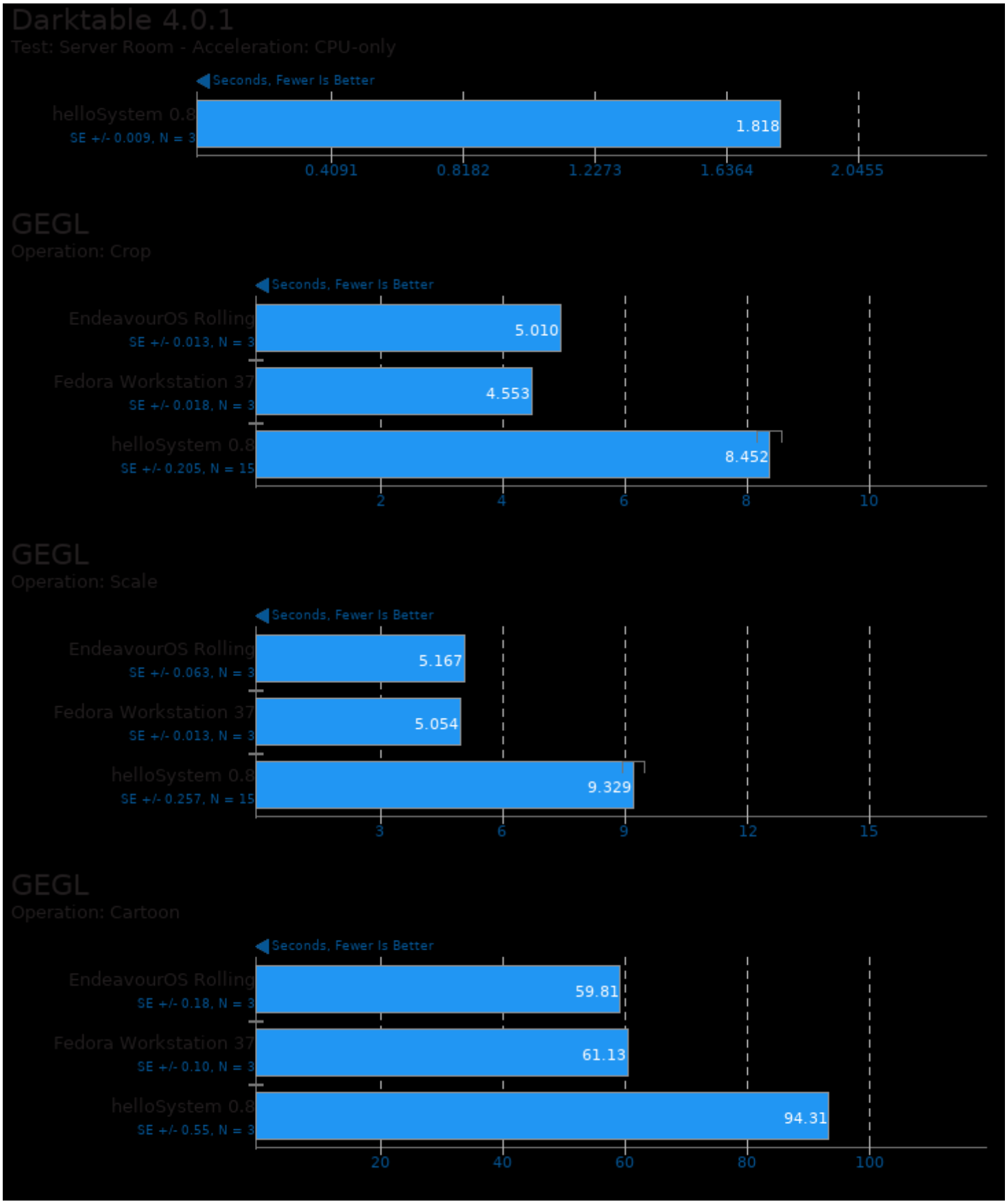
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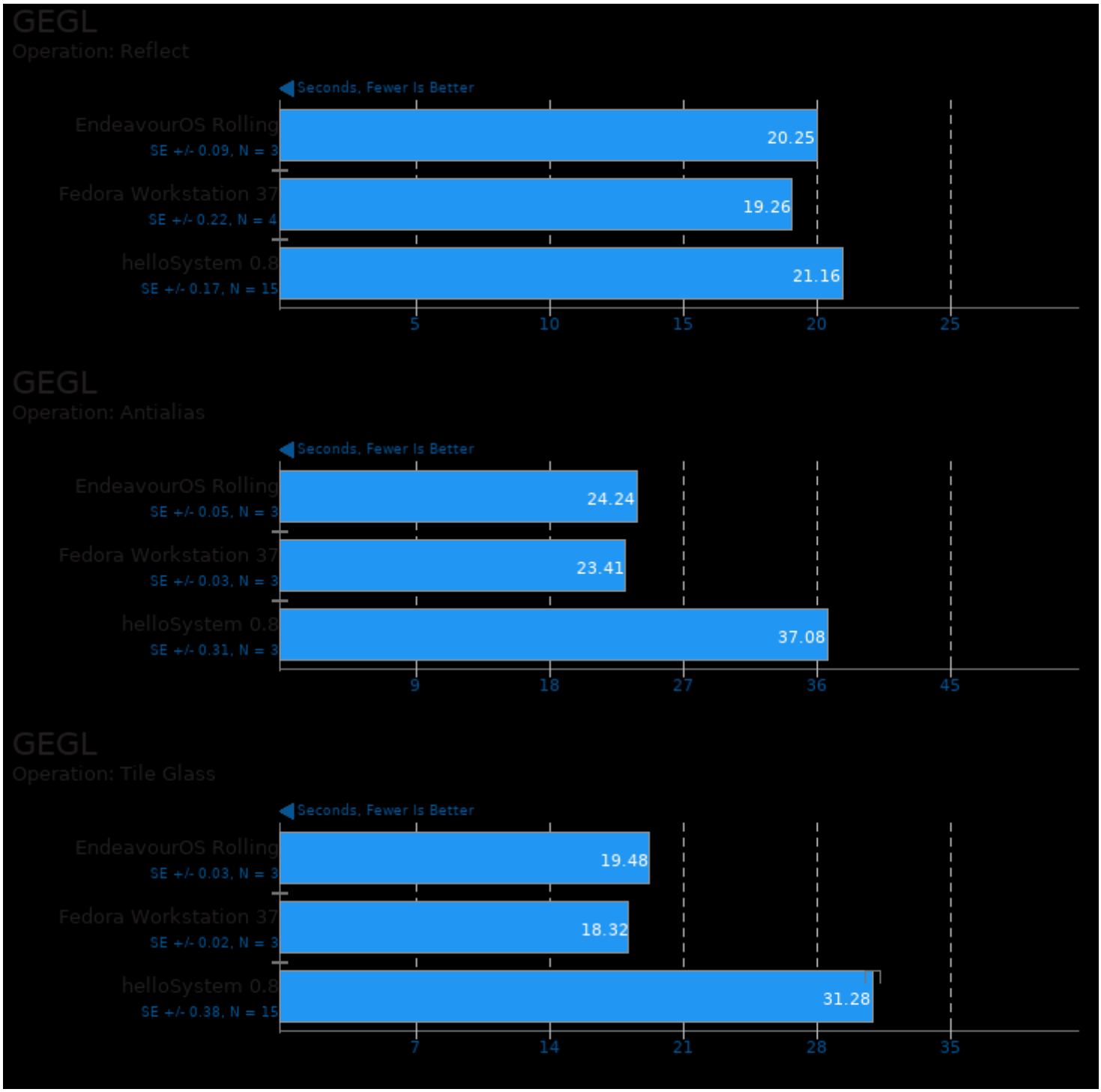
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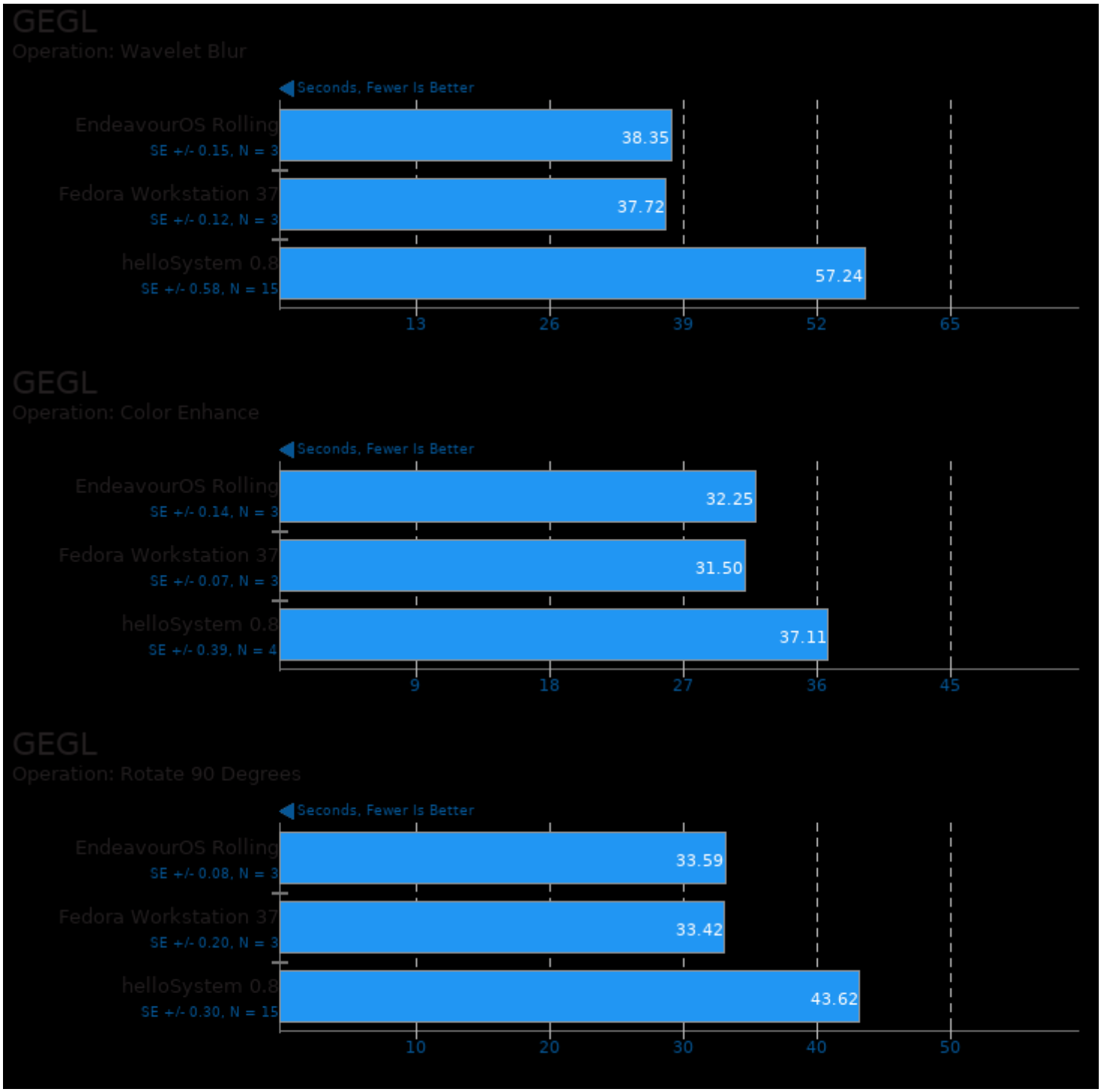
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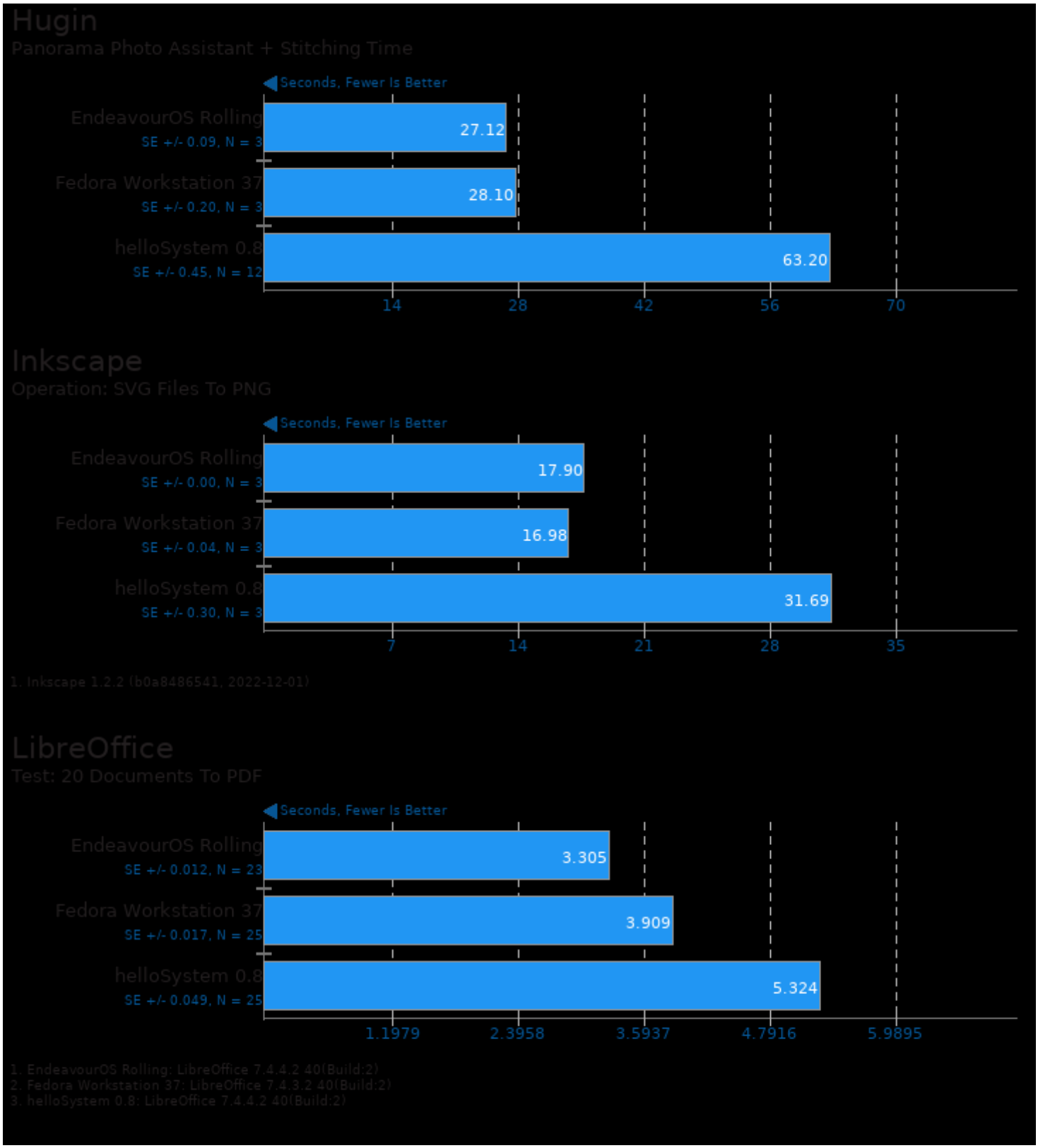
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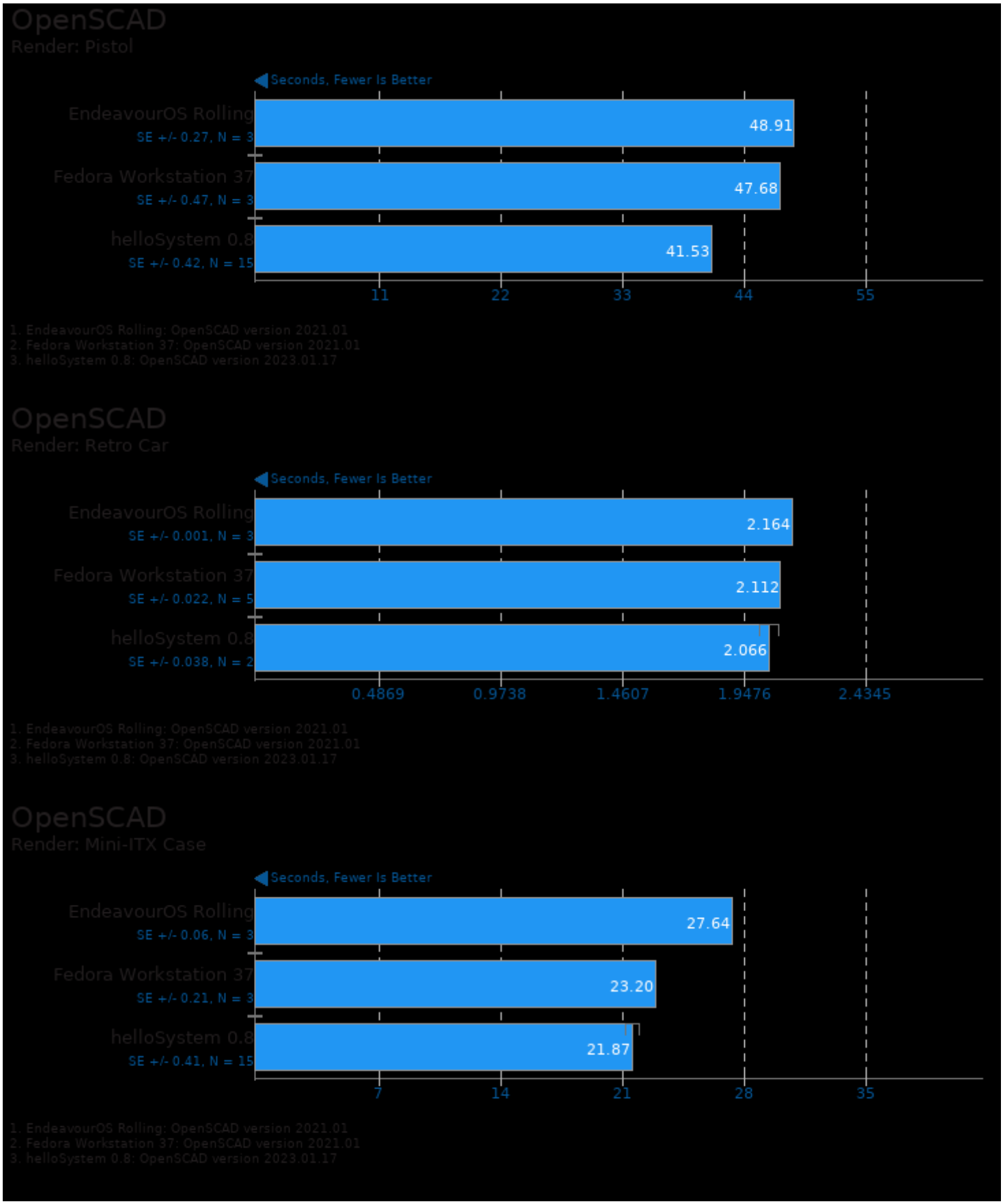
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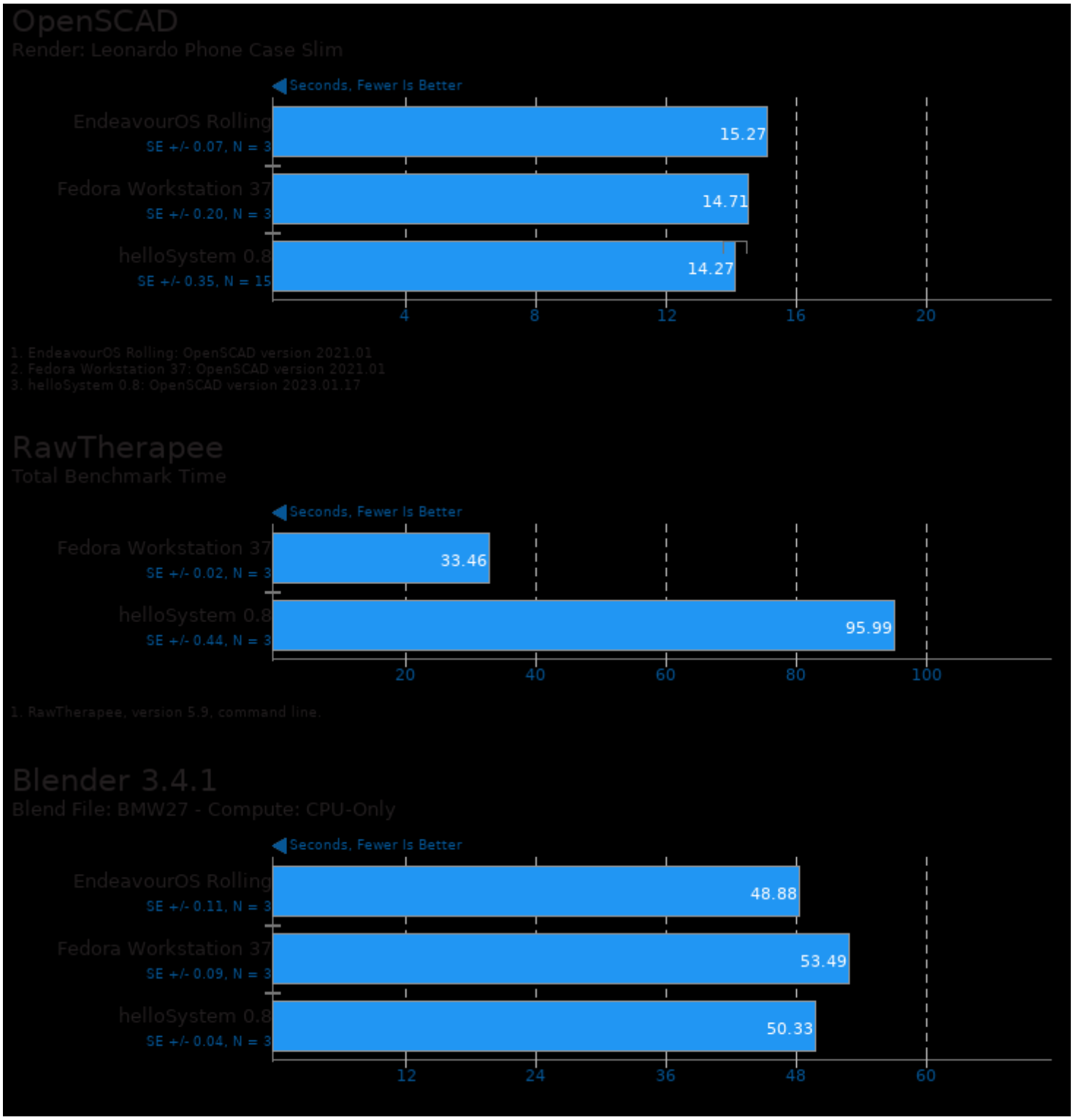
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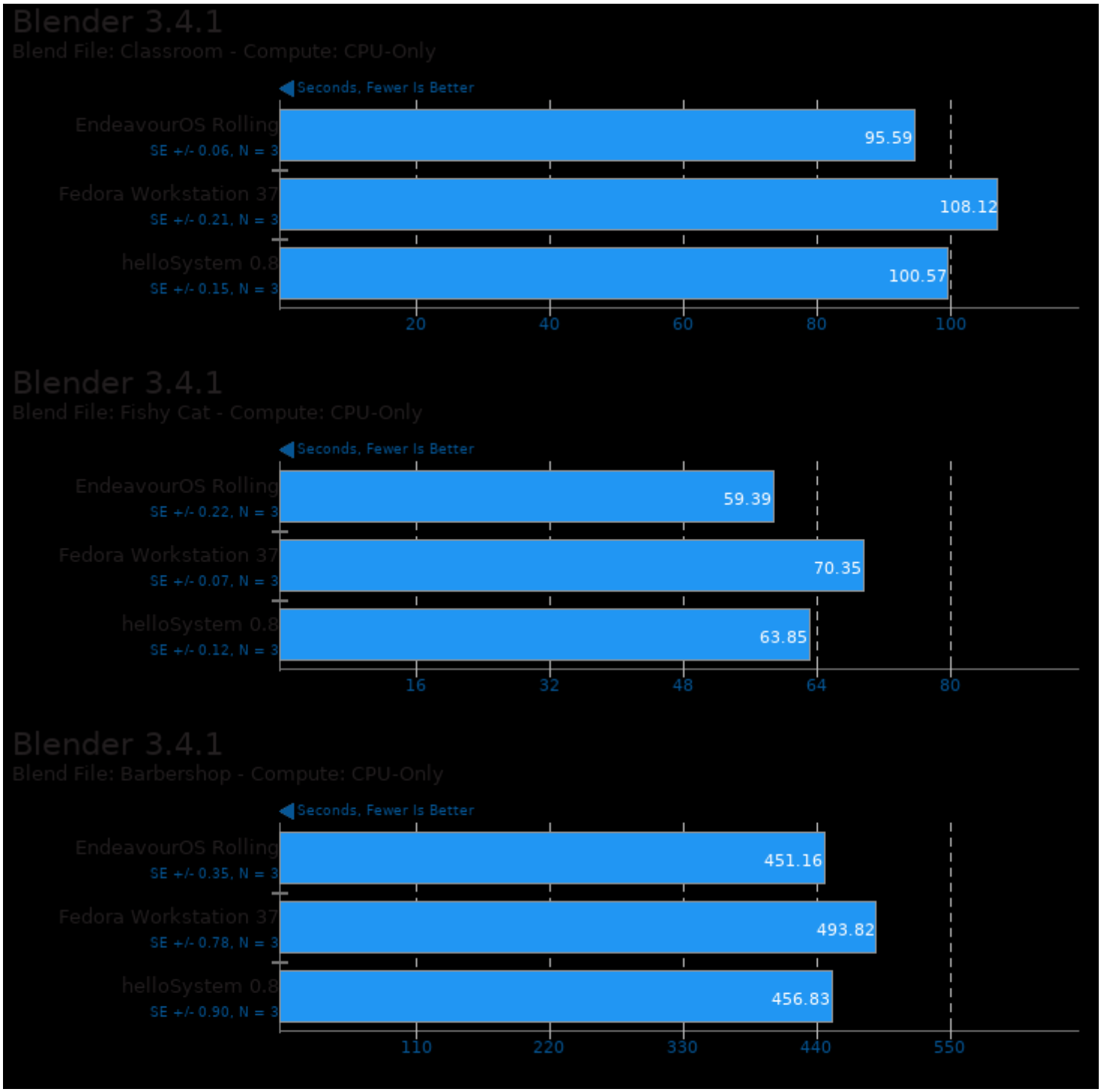
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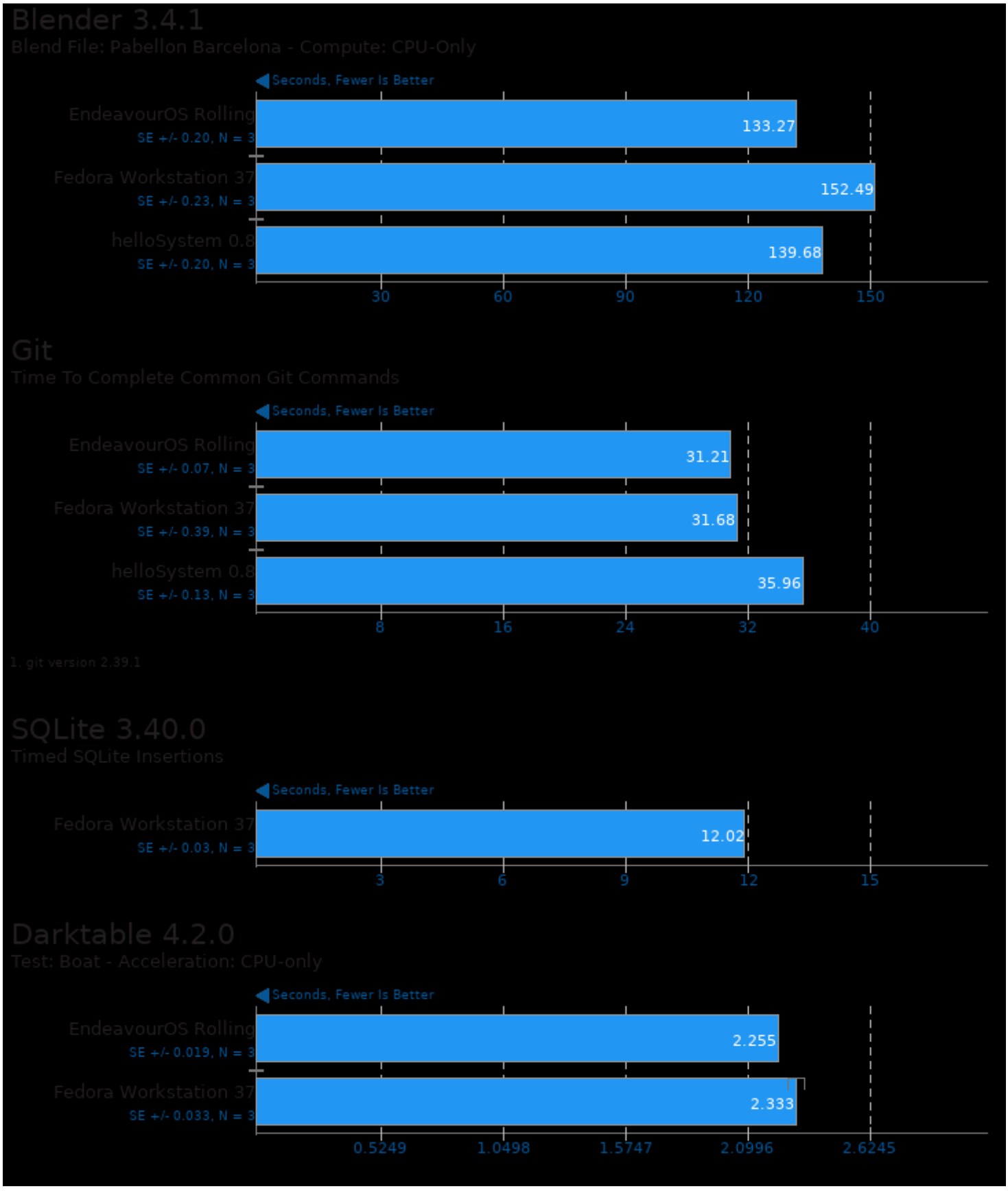
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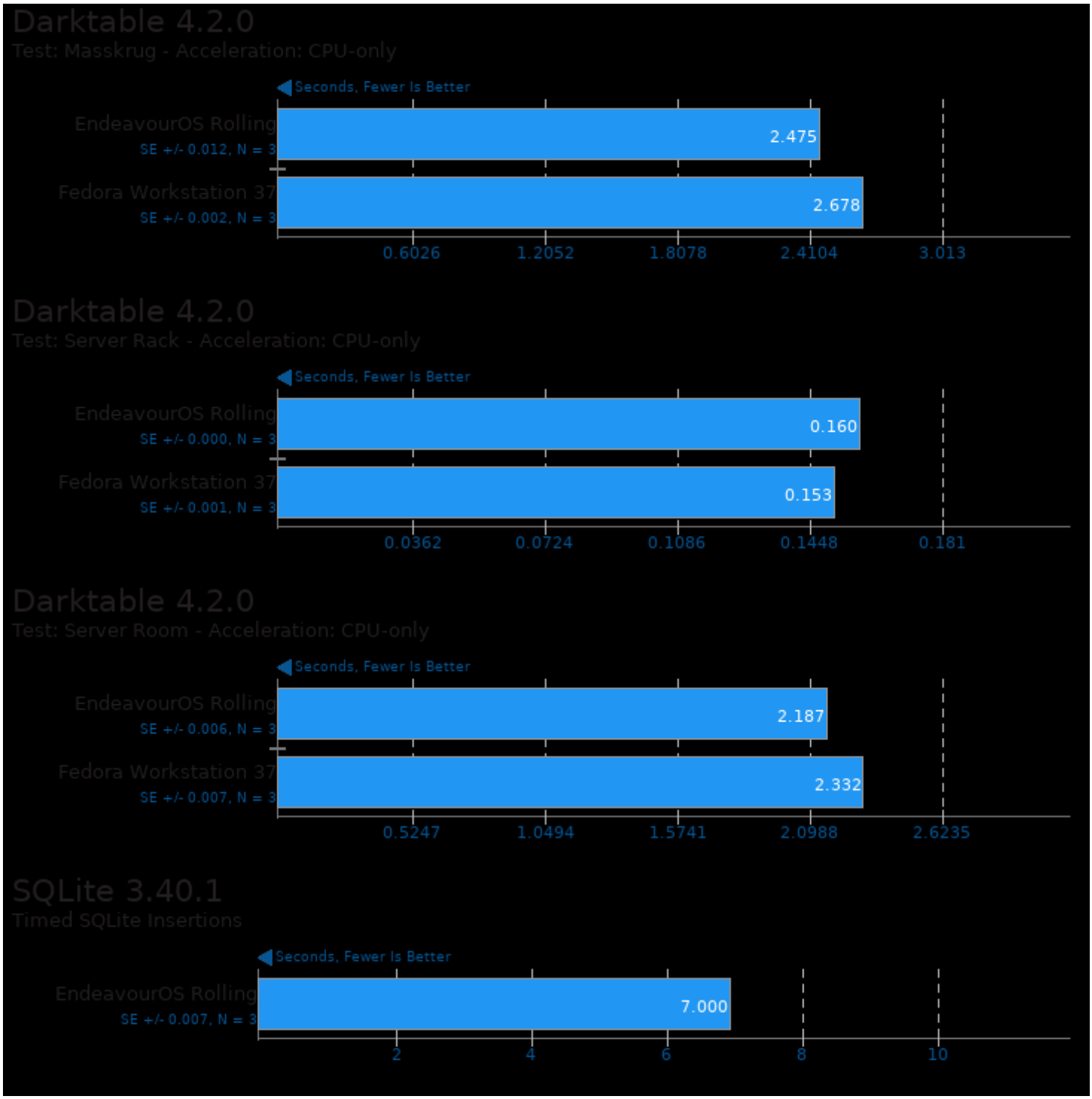
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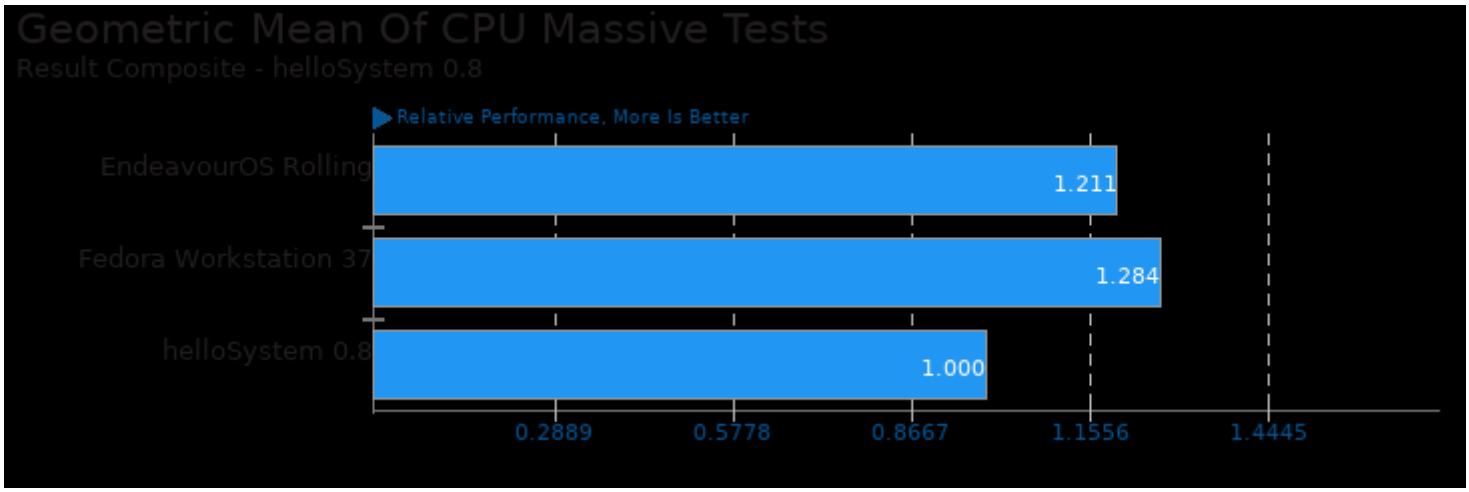
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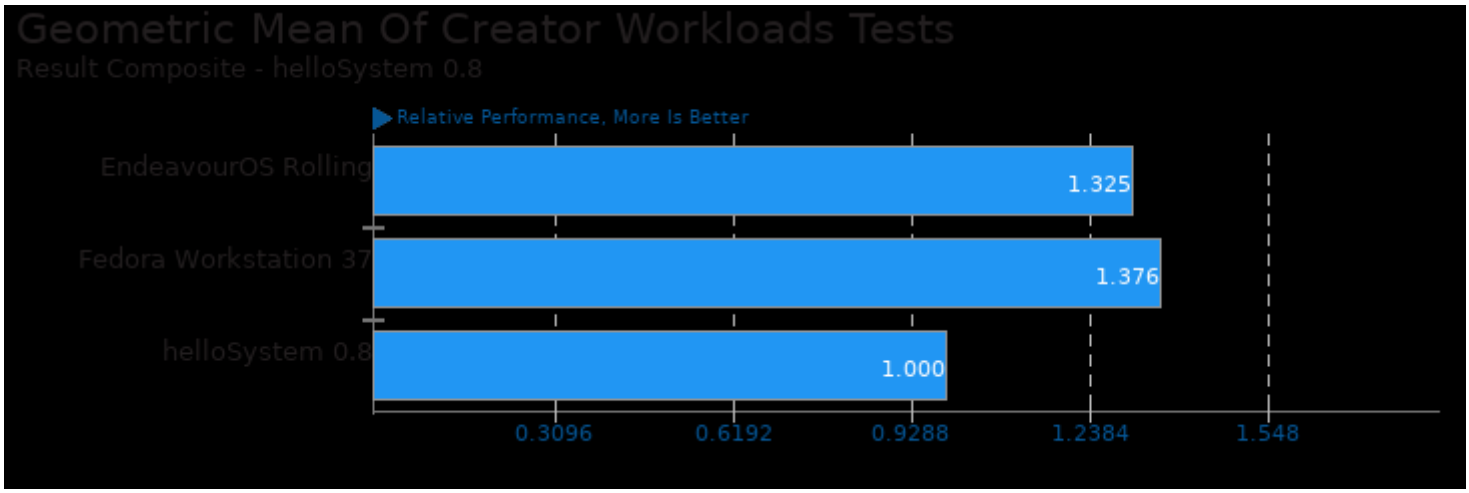
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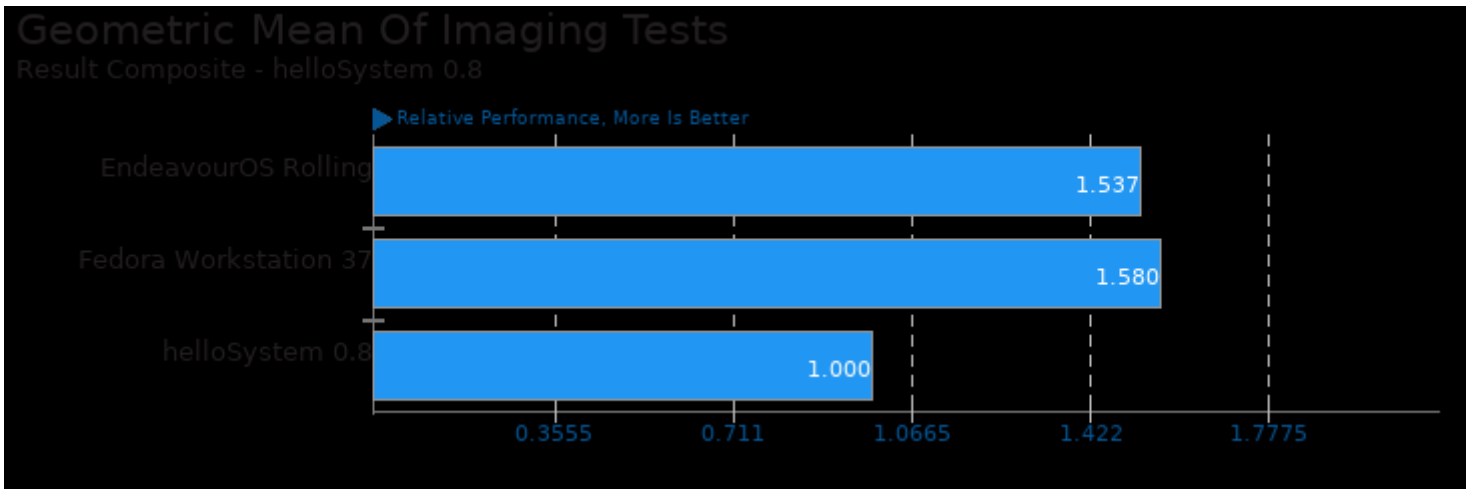
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/dacapobench, pts/numpy, pts/phpbench, system/darktable and pts/renaissance



Geometric mean based upon tests: system/inkscape, system/rawtherapee, system/hugin, system/darktable, system/gegl and system/openscad

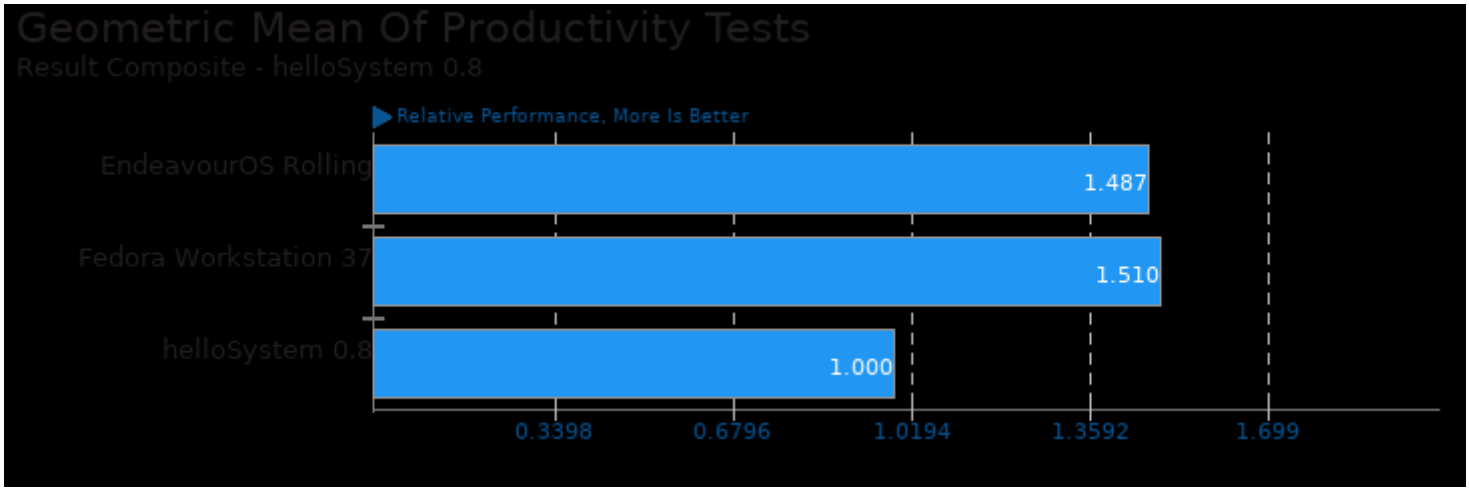


Geometric mean based upon tests: system/inkscape, system/rawtherapee, system/hugin, system/darktable and system/gegl

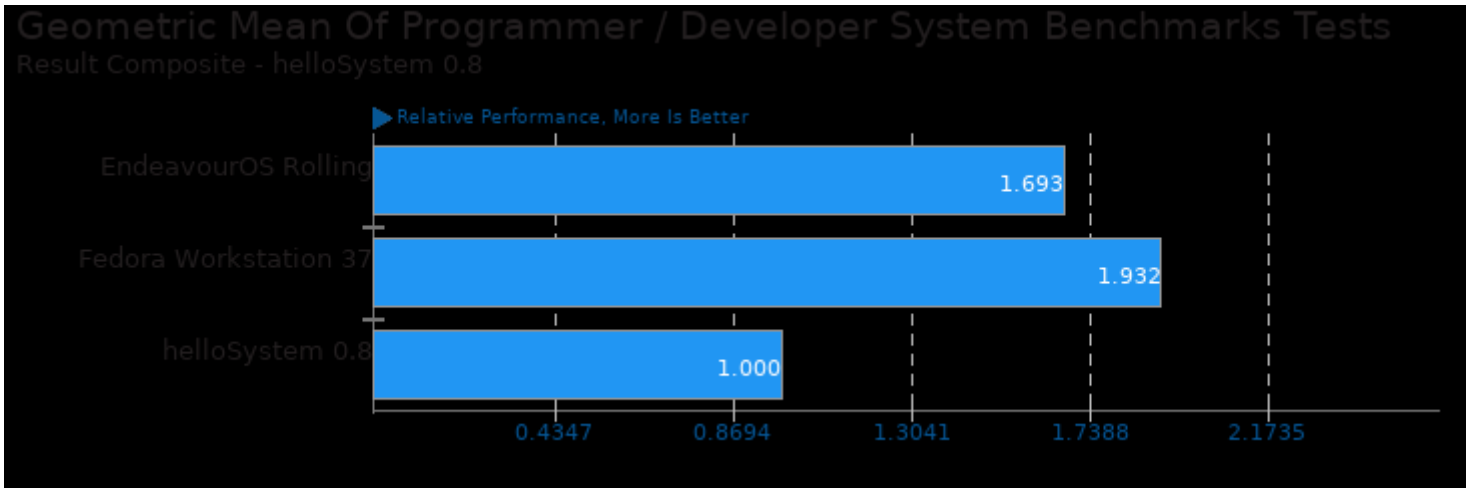
helloSystem 0.8



Geometric mean based upon tests: pts/dacapobench and pts/renaissance



Geometric mean based upon tests: system/libreoffice, system/inkscape and system/gegl



Geometric mean based upon tests: pts/node-web-tooling, pts/git, pts/pyperformance and pts/pybench

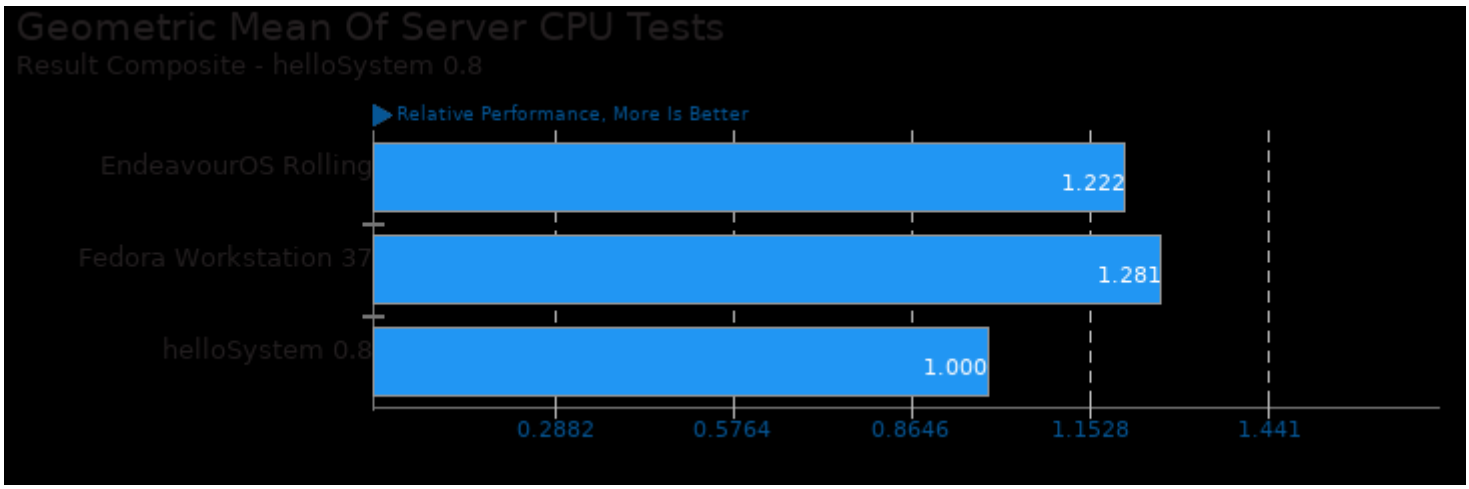
helloSystem 0.8



Geometric mean based upon tests: pts/pybench, pts/numpy and pts/pyperformance

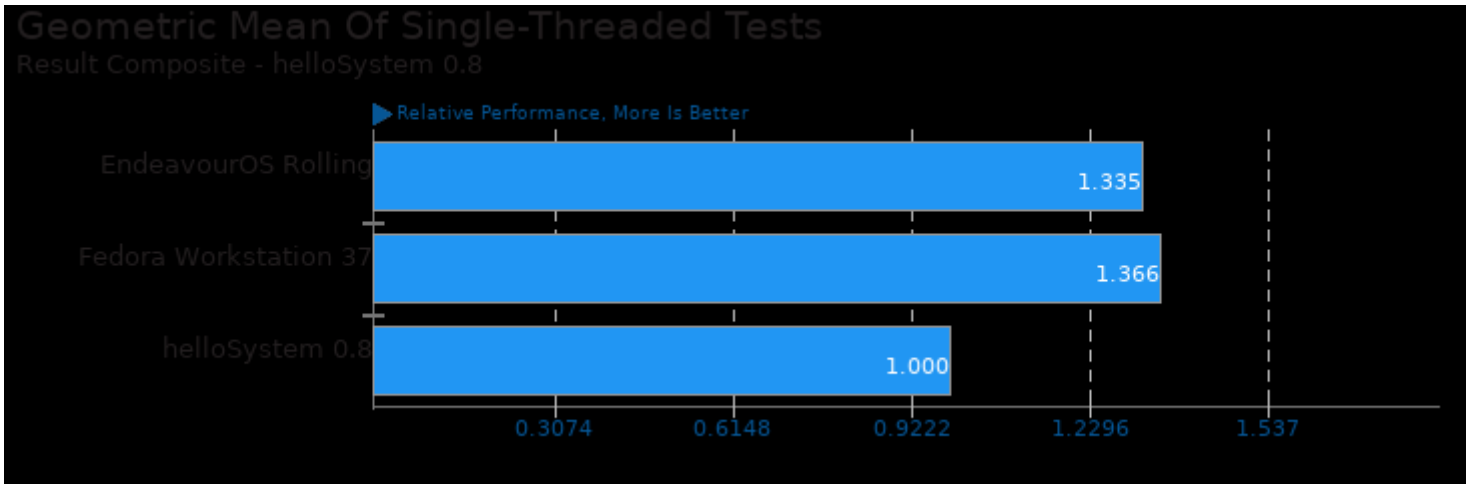


Geometric mean based upon tests: pts/phpbench and pts/node-web-tooling



Geometric mean based upon tests: pts/dacapobench, pts/renaissance, pts/pybench, pts/numpy and pts/phpbench

helloSystem 0.8



Geometric mean based upon tests: pts/numpy, system/inkscape, pts/pybench, pts/phpbench and pts/git

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 09:51.