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pgbench xeon

Intel Core i7-9700TE testing with a C OZE GM-1000 v0.0.01.001 (5.13 BIOS) and NVIDIA Quadro P2000 4GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

3 had the most wins, coming in first place for 43% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.102x the speed of the slowest (1). 2 was 0.944x the speed of 3, 4 was 0.963x the speed of 2, 1 was 0.998x the speed of 4.

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

PostgreSQL pgbench (Scaling Factor: 1 - Clients: 100 - Mode: Read Write) at 1.136x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 100 - Mode: Read Write - Average Latency) at 1.135x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 250 - Mode: Read Only - Average Latency) at 1.079x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 250 - Mode: Read Only) at 1.078x
PostgreSQL pgbench (Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency) at 1.058x
PostgreSQL pgbench (Scaling Factor: 100 - Clients: 250 - Mode: Read Only) at 1.057x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 1 - Mode: Read Only - Average Latency) at 1.025x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 100 - Mode: Read Only) at 1.016x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 100 - Mode: Read Only - Average Latency) at 1.016x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 50 - Mode: Read Only - Average Latency) at 1.016x.

Test Systems:

1

2

3

4

Processor: Intel Core i7-9700TE @ 3.80GHz (8 Cores), Motherboard: C OZE GM-1000 v0.0.01.001 (5.13 BIOS), Chipset: Intel Cannon Lake PCH, Memory: 32GB, Disk: CIE M8 T405 512GB, Graphics: NVIDIA Quadro P2000 4GB (1455/3003MHz), Audio: Realtek ALC888-VD, Monitor: DELL S2409W, Network: Intel I219-LM + 2 x Intel 10G X550T + Intel I210

OS: Ubuntu 20.10, Kernel: 5.8.0-25-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: NVIDIA 455.28, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.1.96, Vulkan: 1.2.142, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0xd6 - Thermald 2.3
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + 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 Enhanced IBRS IBPB: conditional RSB filling + srbds: Mitigation of TSX disabled + tsx_async_abort: Mitigation of TSX disabled

	1	2	3	4
PostgreSQL pgbench - 1 - 1 - Read Only (TPS)	24736	**24645**	**24836**	24806
Normalized	99.6%	99.23%	100%	99.88%
Standard Deviation	1.9%	1%	1%	1.5%
PostgreSQL pgbench - 1 - 1 - Read Only - Average Latency (ms)	**0.041**	**0.041**	**0.040**	**0.040**
Normalized	97.56%	97.56%	100%	100%
Standard Deviation	1.4%	1.4%	1.4%	1.4%
PostgreSQL pgbench - 1 - 1 - Read Write (TPS)	**427**	**501**	496	488
Normalized	85.23%	100%	99%	97.41%
Standard Deviation	14.9%	0.8%	10.4%	6.3%

pgbench xeon

PostgreSQL pgbench - 1 - 1 - Read Write - Average Latency (ms)	**2.390**	**1.996**	2.042	2.060
Normalized	83.51%	100%	97.75%	96.89%
Standard Deviation	14.8%	0.8%	12.3%	7.4%
PostgreSQL pgbench - 1 - 50 - Read Only (TPS)	**131427**	130318	130969	**129730**
Normalized	100%	99.16%	99.65%	98.71%
Standard Deviation	3.1%	3.4%	3.3%	4%
PostgreSQL pgbench - 1 - 50 - Read Only - Average Latency (ms)	**0.381**	0.384	0.382	**0.386**
Normalized	100%	99.22%	99.74%	98.7%
Standard Deviation	2.9%	3.1%	3.1%	3.6%
PostgreSQL pgbench - 1 - 100 - Read Only (TPS)	**125157**	123134	123386	**123127**
Normalized	100%	98.38%	98.58%	98.38%
Standard Deviation	2.8%	3.6%	2.8%	2.9%
PostgreSQL pgbench - 1 - 100 - Read Only - Average Latency (ms)	**0.800**	**0.813**	0.811	**0.813**
Normalized	100%	98.4%	98.64%	98.4%
Standard Deviation	2.7%	3.3%	2.6%	2.8%
PostgreSQL pgbench - 1 - 250 - Read Only (TPS)	**121774**	114403	116767	**112911**
Normalized	100%	93.95%	95.89%	92.72%
Standard Deviation	1.6%	3.7%	3.8%	3.6%
PostgreSQL pgbench - 1 - 250 - Read Only - Average Latency (ms)	**2.054**	2.189	2.144	**2.217**
Normalized	100%	93.83%	95.8%	92.65%
Standard Deviation	1.5%	3.6%	3.7%	3.5%
PostgreSQL pgbench - 1 - 50 - Read Write (TPS)	**700**	726	**815**	726
Normalized	85.89%	89.08%	100%	89.08%
Standard Deviation	13%	0.9%	2.8%	0.4%
PostgreSQL pgbench - 1 - 50 - Read Write - Average Latency (ms)	**72.649**	68.864	**61.394**	68.850
Normalized	84.51%	89.15%	100%	89.17%
Standard Deviation	14.1%	0.9%	2.8%	0.4%
PostgreSQL pgbench - 100 - 1 - Read Only (TPS)	21818	**21927**	**21668**	21837
Normalized	99.5%	100%	98.82%	99.59%
Standard Deviation	2%	0.8%	1.1%	0.4%
PostgreSQL pgbench - 100 - 1 - Read Only - Average Latency (ms)	0.046	0.046	0.046	0.046
Standard Deviation	2.5%	1.3%	1.2%	0%
PostgreSQL pgbench - 1 - 100 - Read Write (TPS)	711	**707**	**803**	717
Normalized	88.54%	88.04%	100%	89.29%
Standard Deviation	2.1%	0.6%	2.2%	2.5%
PostgreSQL pgbench - 1 - 100 - Read Write - Average Latency (ms)	140.684	**141.502**	**124.681**	139.492
Normalized	88.62%	88.11%	100%	89.38%
Standard Deviation	2.1%	0.6%	2.2%	2.5%

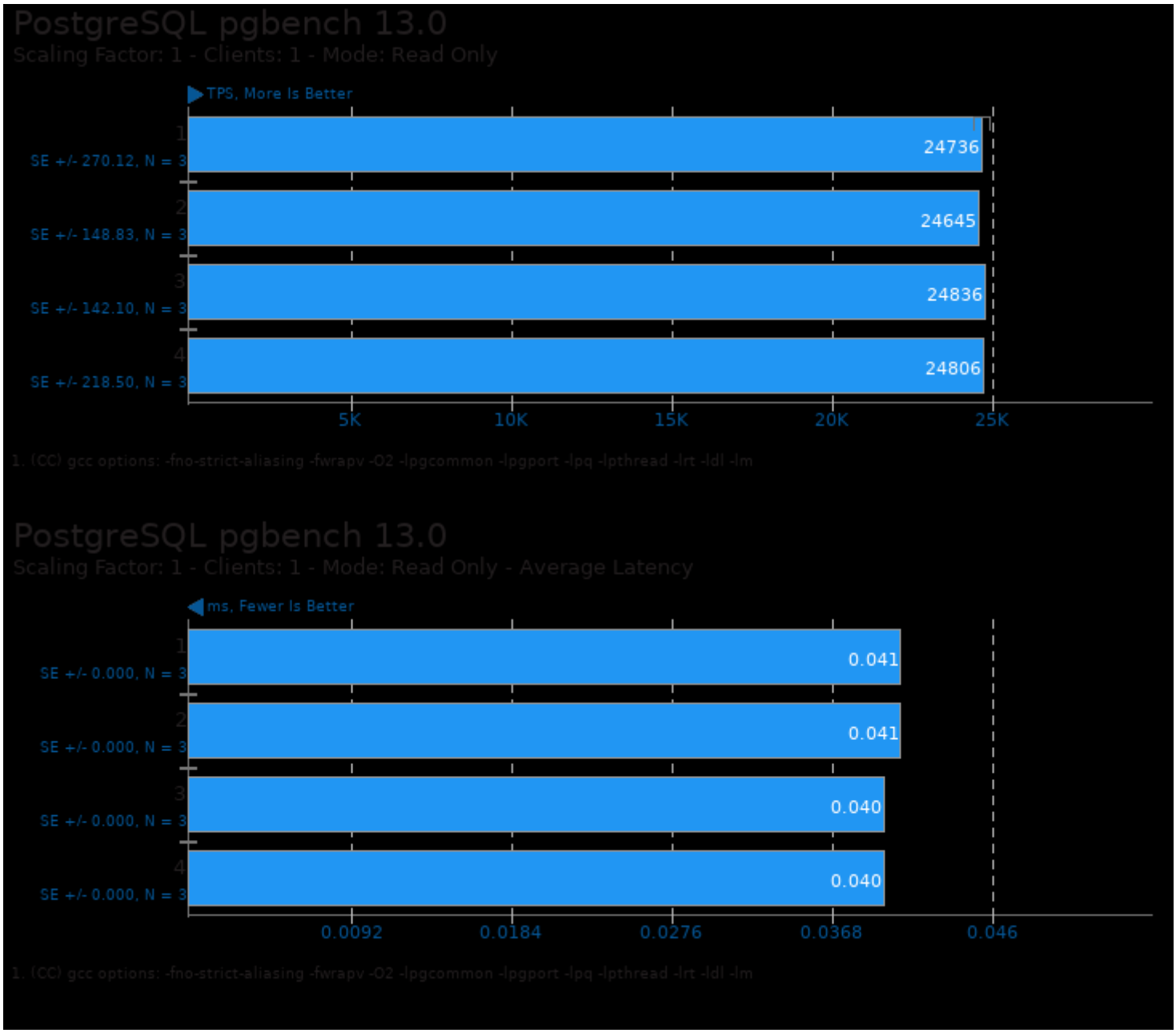
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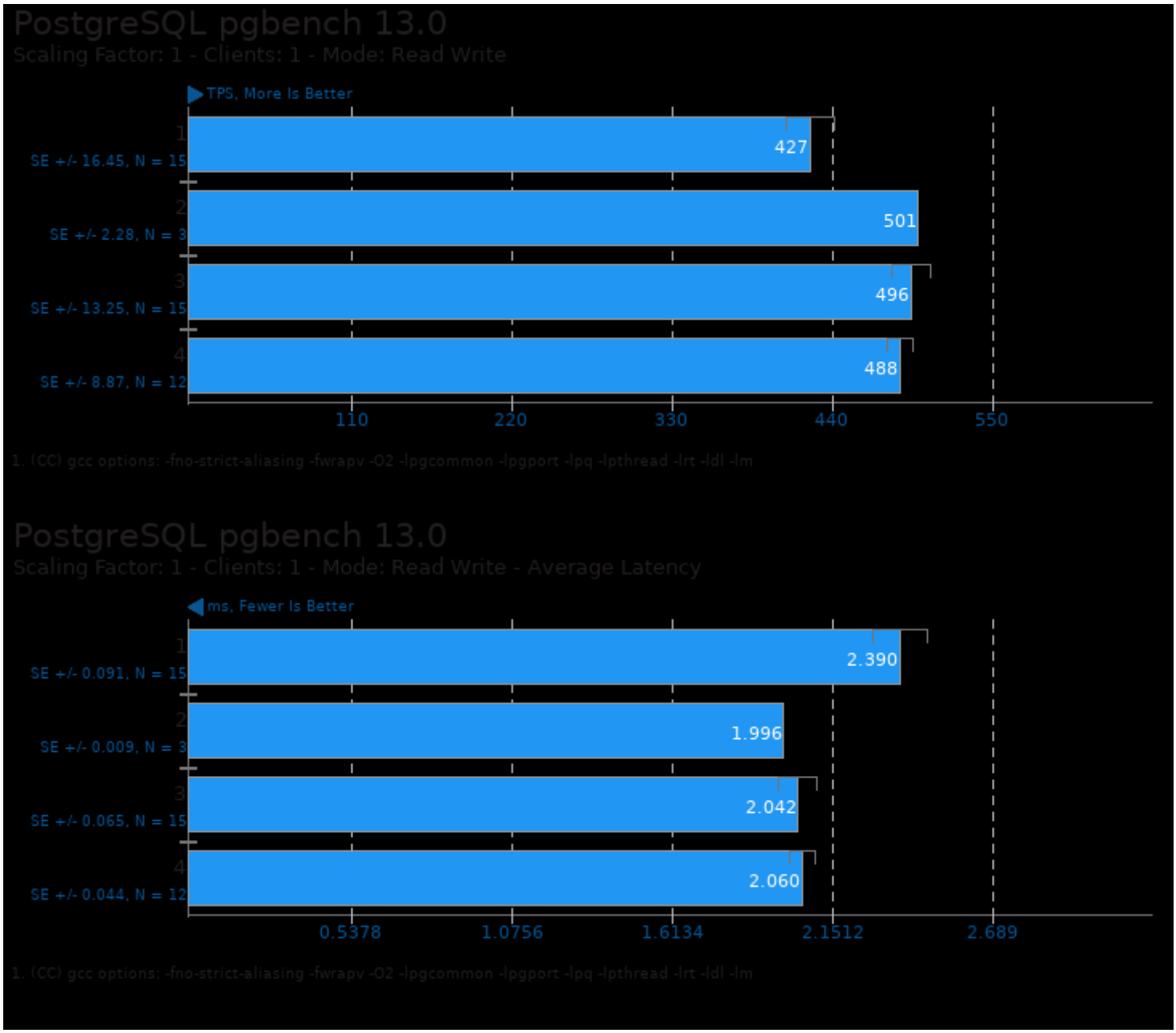
PostgreSQL pgbench - 1 - 250 - Read Write (TPS)	**667**	748	**863**	741
Normalized	77.29%	86.67%	100%	85.86%
Standard Deviation	12.8%	22.7%	22.2%	21.1%
PostgreSQL pgbench - 1 - 250 - Read Write - Average Latency (ms)	**379.814**	355.408	**308.220**	351.815
Normalized	81.15%	86.72%	100%	87.61%
Standard Deviation	11.1%	29.3%	30%	21.7%
PostgreSQL pgbench - 100 - 1 - Read Write (TPS)	**513**	574	**725**	534
Normalized	70.76%	79.17%	100%	73.66%
Standard Deviation	22.9%	26.5%	18.3%	23.2%
PostgreSQL pgbench - 100 - 1 - Read Write - Average Latency (ms)	**2.029**	1.839	**1.446**	1.939
Normalized	71.27%	78.63%	100%	74.57%
Standard Deviation	20.1%	21.6%	28.6%	16.3%
PostgreSQL pgbench - 100 - 50 - Read Only (TPS)	112045	**112717**	**111067**	111572
Normalized	99.4%	100%	98.54%	98.98%
Standard Deviation	4.2%	3.6%	3.9%	4.1%
PostgreSQL pgbench - 100 - 50 - Read Only - Average Latency (ms)	0.447	**0.444**	**0.451**	0.449
Normalized	99.33%	100%	98.45%	98.89%
Standard Deviation	4.1%	3.4%	3.6%	3.7%
PostgreSQL pgbench - 100 - 100 - Read Only (TPS)	**106550**	105659	105984	**105542**
Normalized	100%	99.16%	99.47%	99.05%
Standard Deviation	2.6%	2.9%	2.9%	2.8%
PostgreSQL pgbench - 100 - 100 - Read Only - Average Latency (ms)	**0.939**	0.947	0.945	**0.948**
Normalized	100%	99.16%	99.37%	99.05%
Standard Deviation	2.6%	2.8%	2.8%	2.7%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	**96709**	**102265**	97064	97982
Normalized	94.57%	100%	94.91%	95.81%
Standard Deviation	2.8%	2.7%	2.9%	3.6%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	**2.588**	**2.447**	2.578	2.555
Normalized	94.55%	100%	94.92%	95.77%
Standard Deviation	2.8%	2.6%	2.8%	3.6%
PostgreSQL pgbench - 100 - 50 - Read Write (TPS)	6897	6640	**9925**	**4472**
Normalized	69.49%	66.9%	100%	45.06%
Standard Deviation	34.9%	28.7%	33.5%	29.5%
PostgreSQL pgbench - 100 - 50 - Read Write - Average Latency (ms)	8.393	8.200	**5.815**	**12.014**
Normalized	69.28%	70.91%	100%	48.4%
Standard Deviation	44.6%	30.9%	45.7%	26.1%
PostgreSQL pgbench - 100 - 100 - Read Write (TPS)	8587	9068	**9718**	**8547**
Normalized	88.36%	93.31%	100%	87.95%
Standard Deviation	31.1%	28.1%	24.2%	34.9%

pgbench xeon

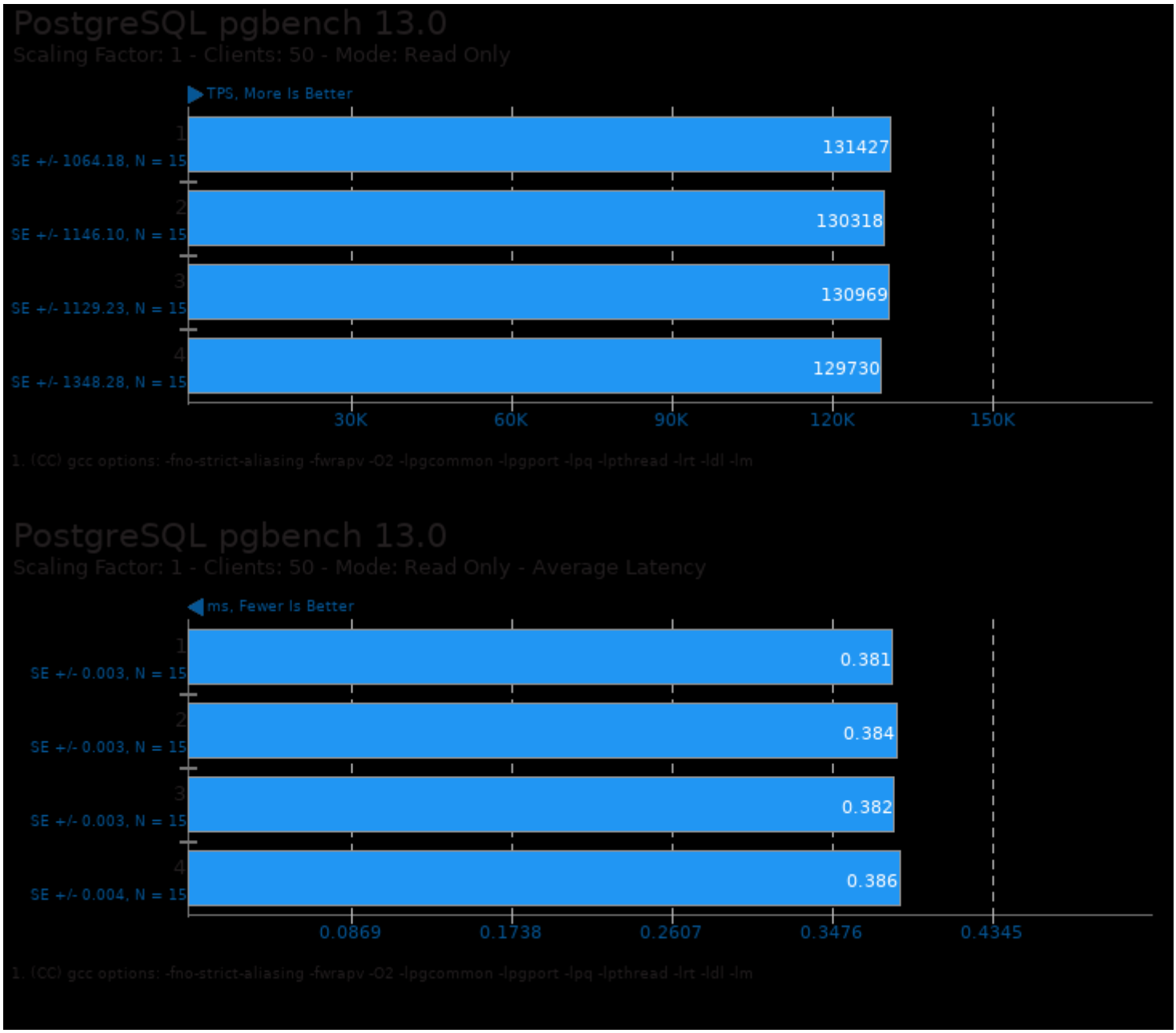
PostgreSQL pgbench - 100 - 100 - Read Write - Average Latency (ms)	13.246	11.823	**10.834**	**14.163**
Normalized	81.79%	91.63%	100%	76.5%
Standard Deviation	45.4%	26.6%	22.9%	56.3%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	**7842**	9261	8319	**9514**
Normalized	82.43%	97.34%	87.44%	100%
Standard Deviation	25.6%	21.6%	22.8%	13.7%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	**34.732**	28.354	31.876	**26.786**
Normalized	77.12%	94.47%	84.03%	100%
Standard Deviation	37.5%	24.5%	27.4%	15%

pgbench xeon

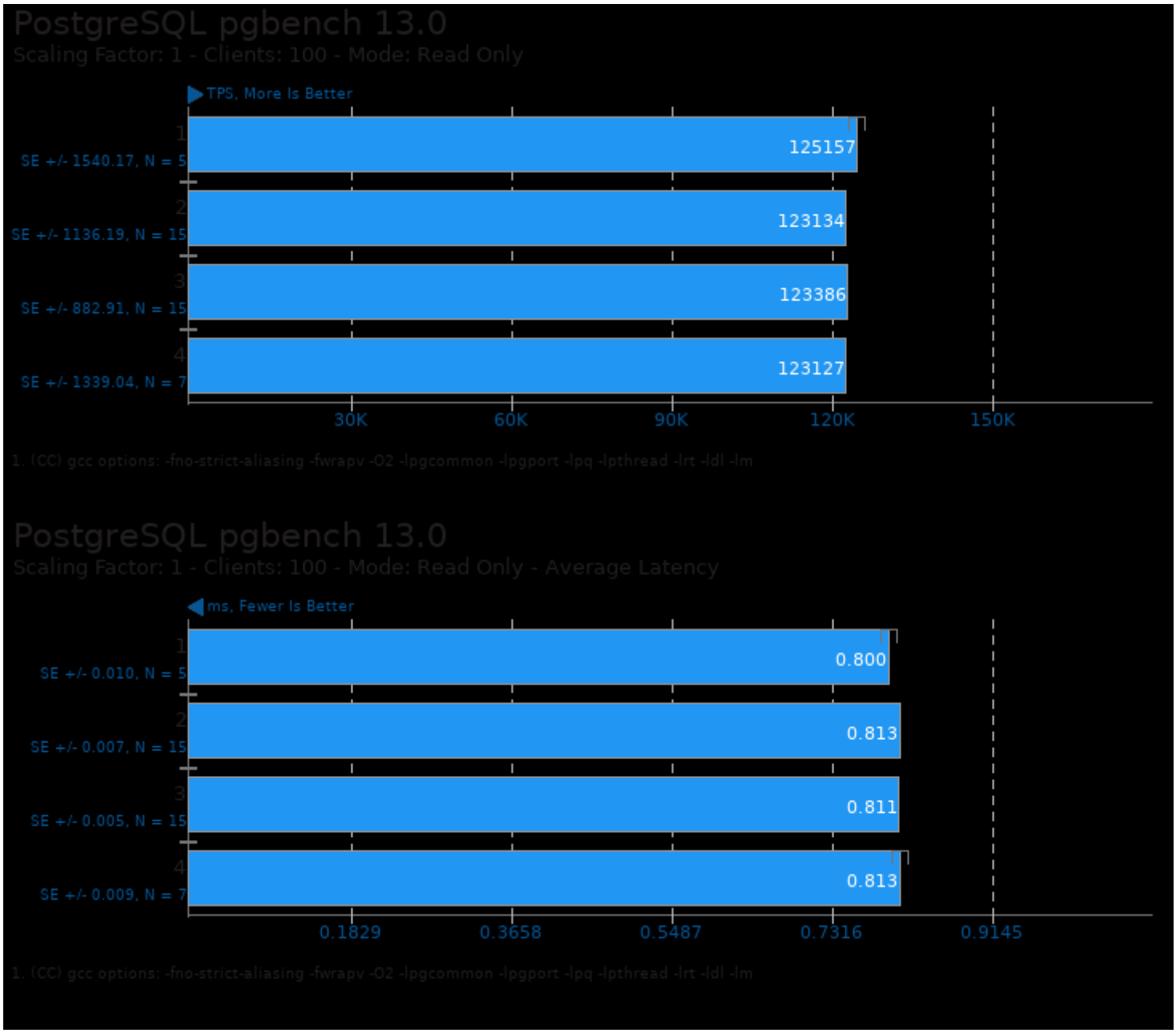



PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write
TPS, More Is Better
1
SE +/- 16.45, N = 15
427
2
SE +/- 2.28, N = 3
501
3
SE +/- 13.25, N = 15
496
4
SE +/- 8.87, N = 12
488
110
220
330
440
550
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
SE +/- 0.091, N = 15
2.390
2
SE +/- 0.009, N = 3
1.996
3
SE +/- 0.065, N = 15
2.042
4
SE +/- 0.044, N = 12
2.060
0.5378
1.0756
1.6134
2.1512
2.689
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

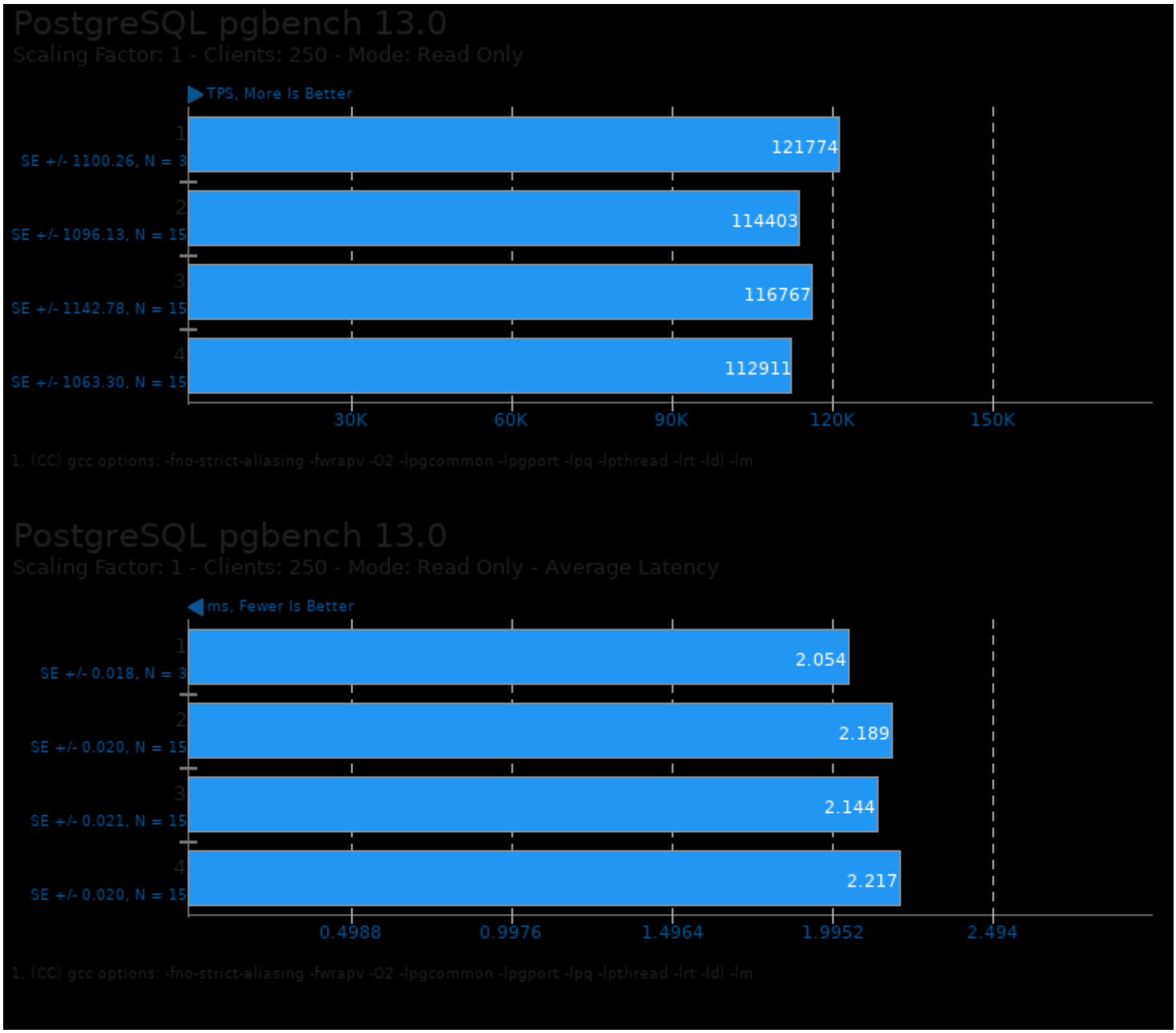
pgbench xeon



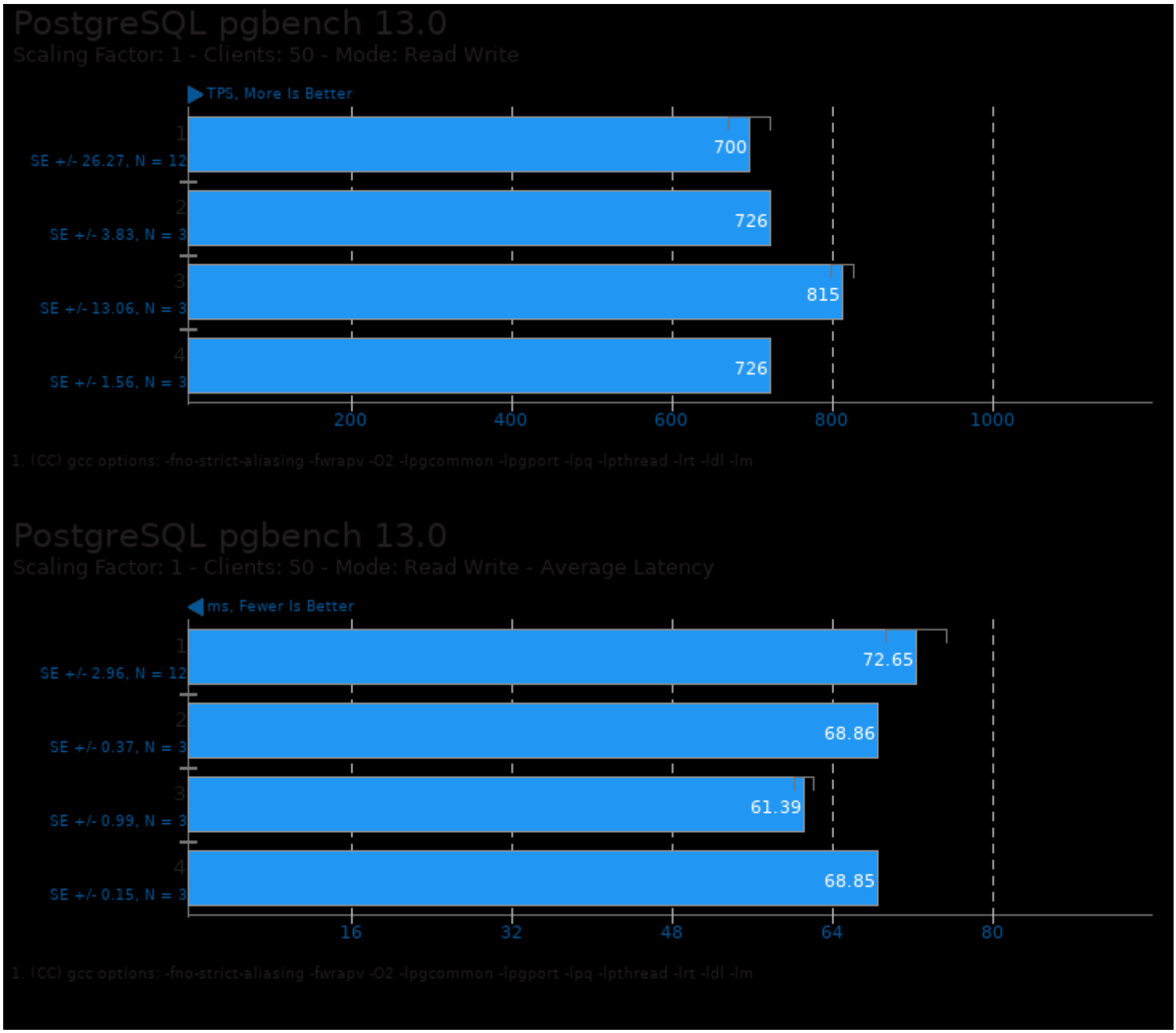
pgbench xeon



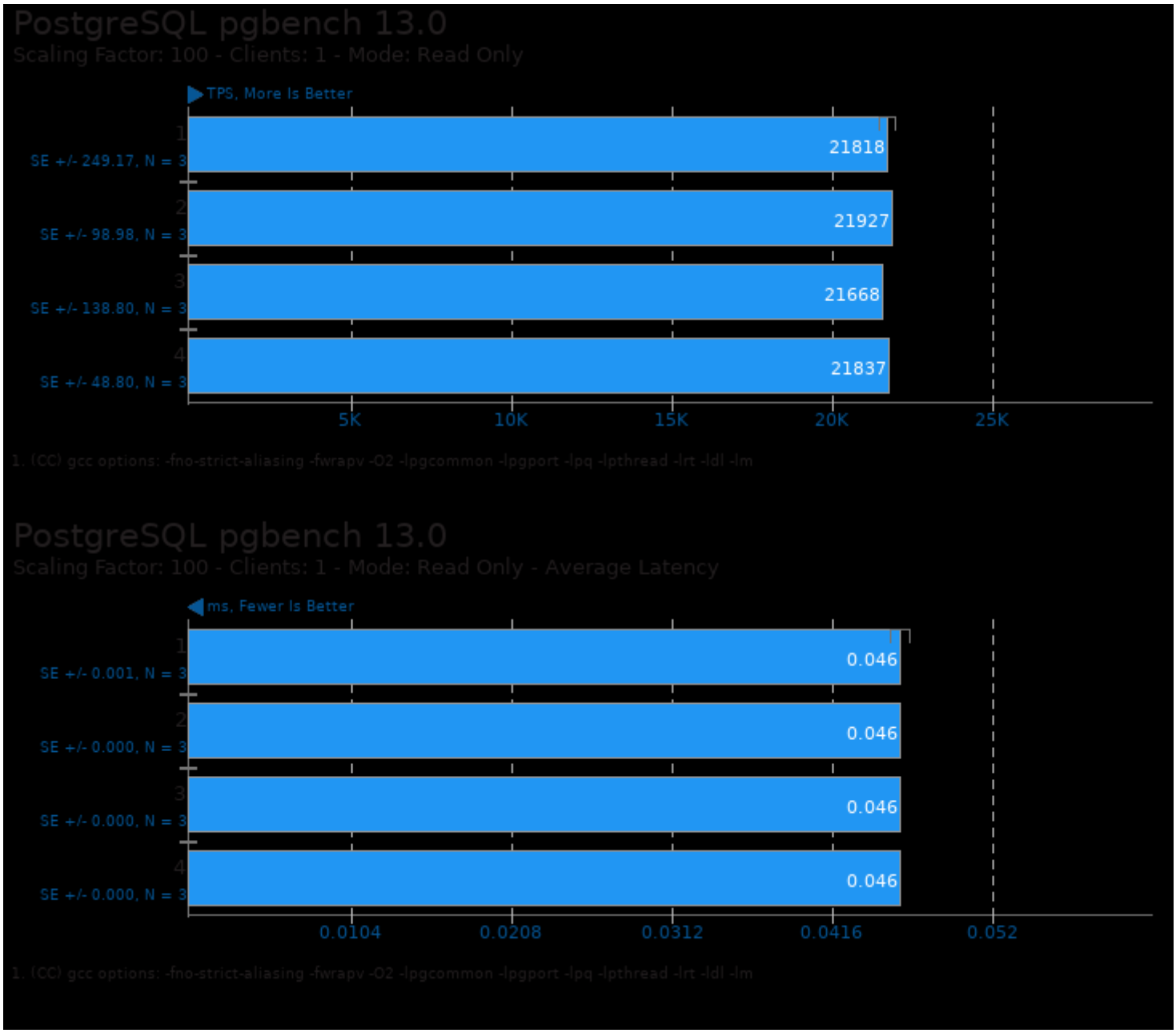
pgbench xeon



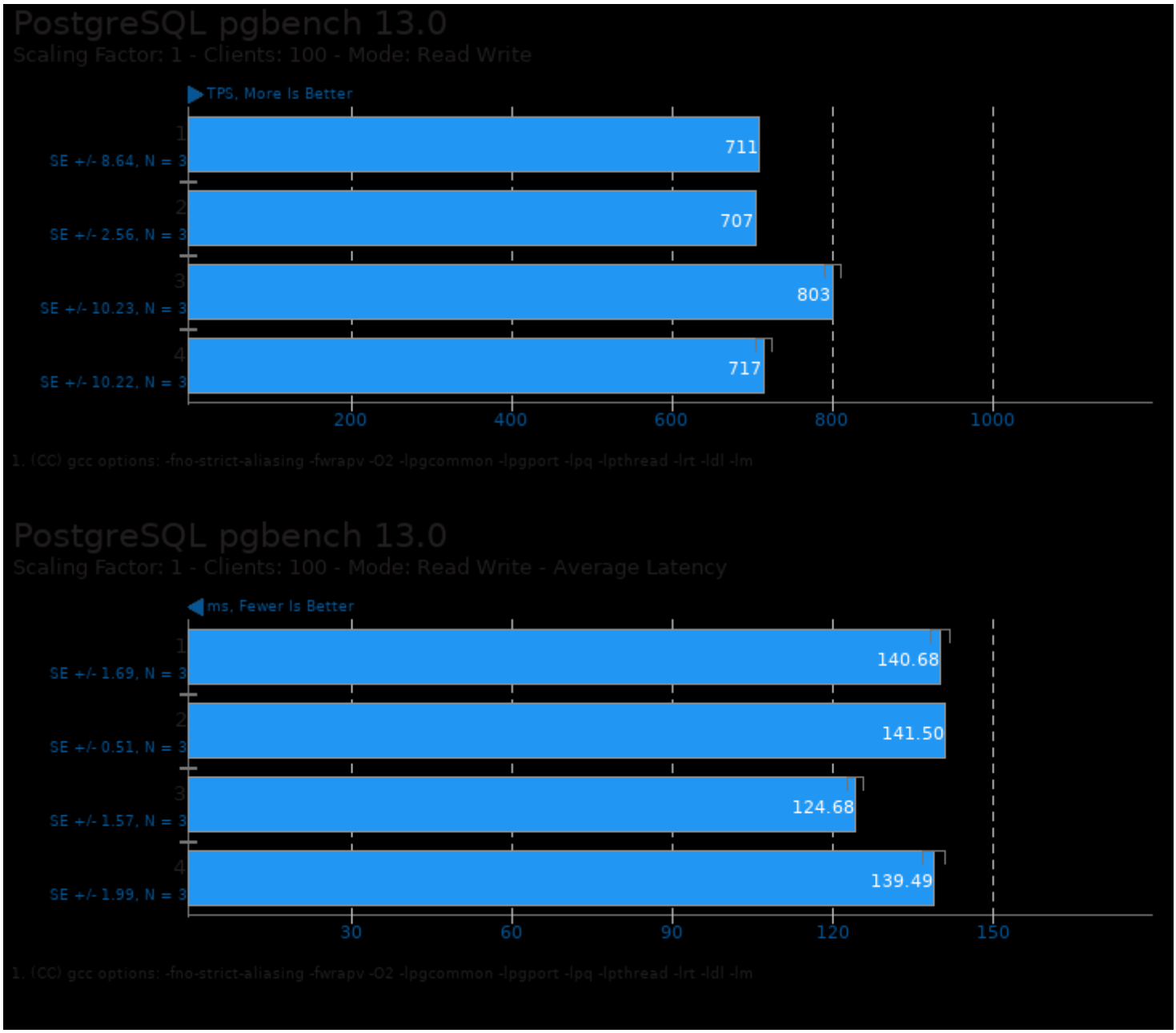
pgbench xeon



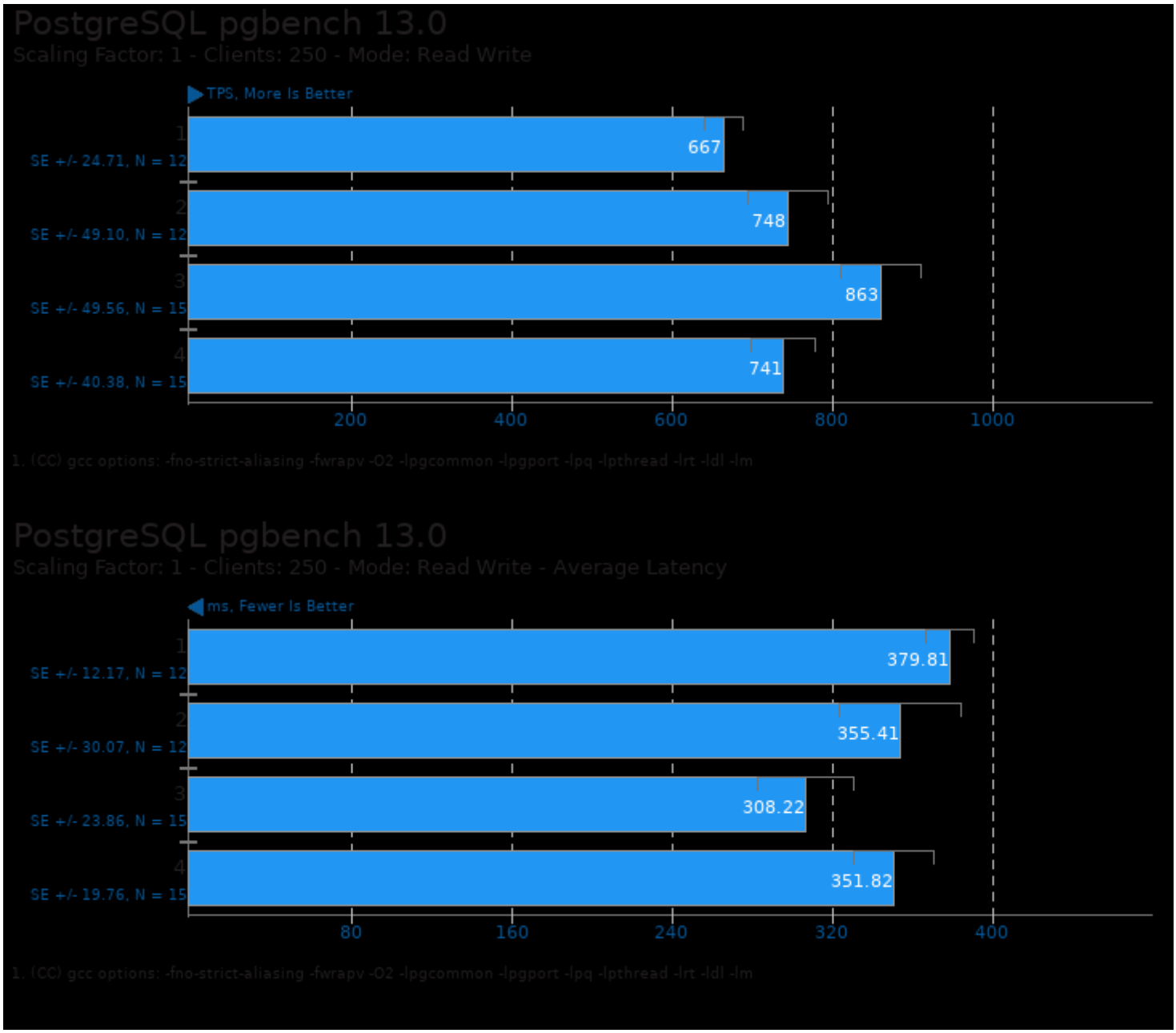
pgbench xeon



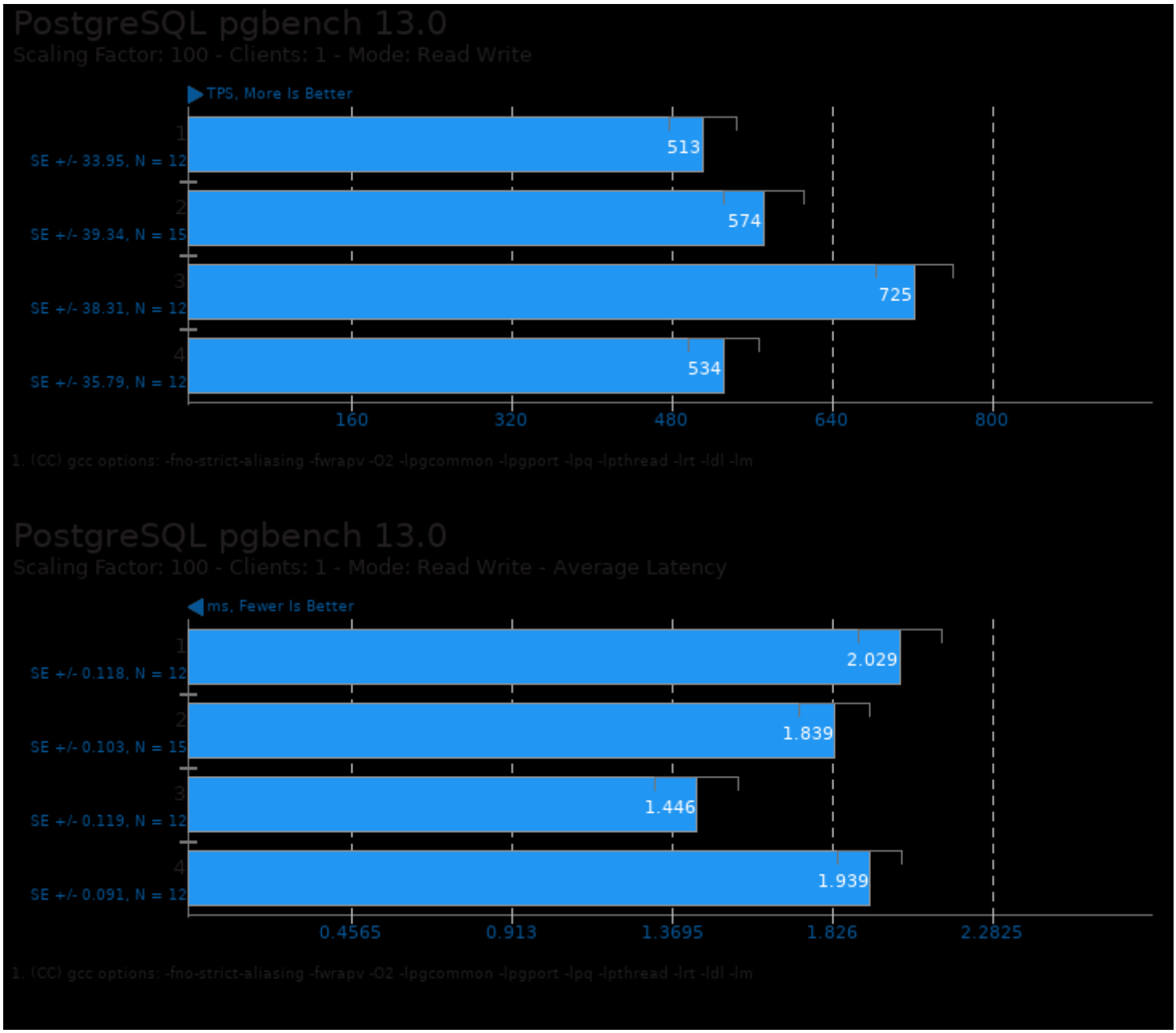
pgbench xeon



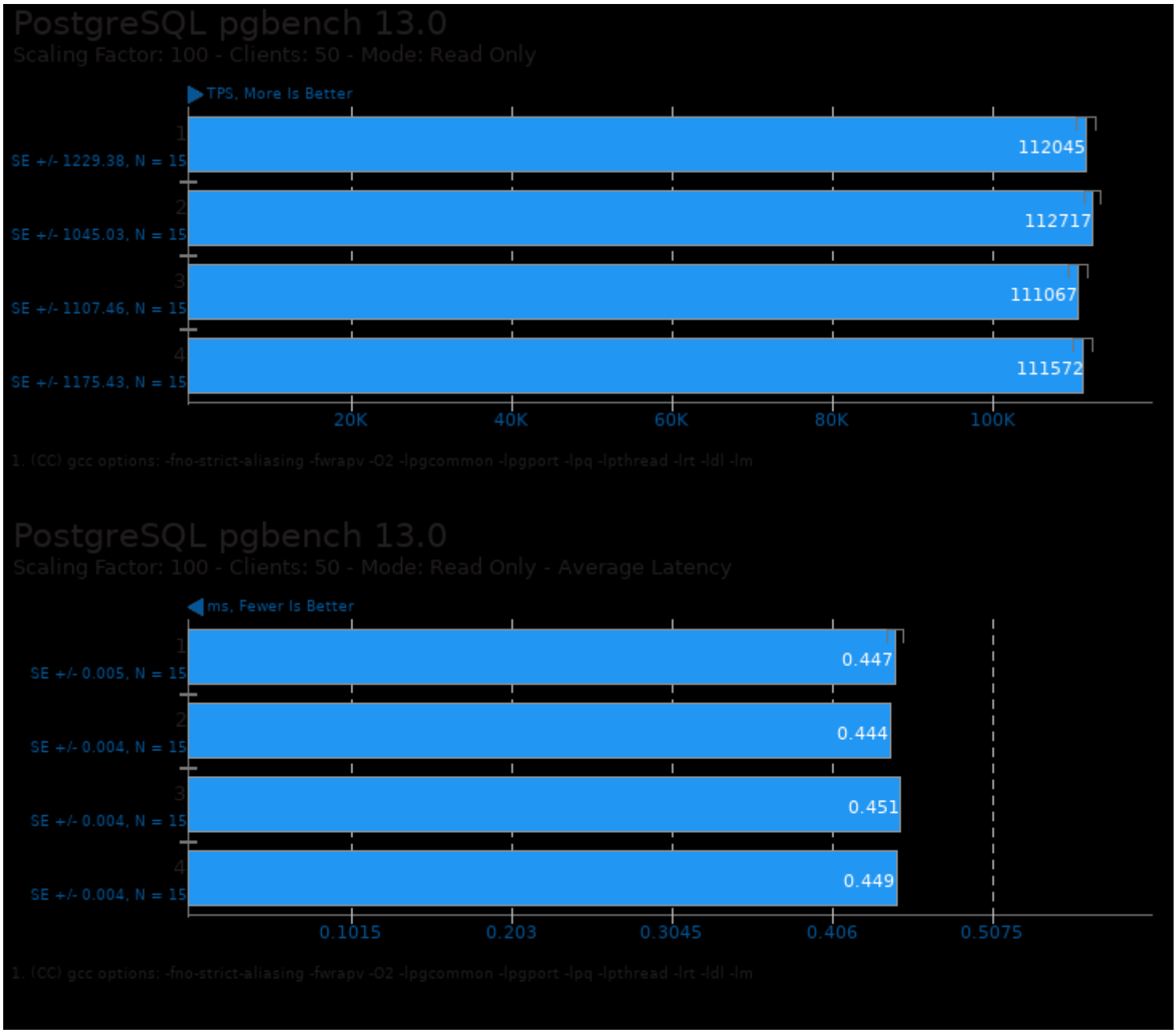
pgbench xeon



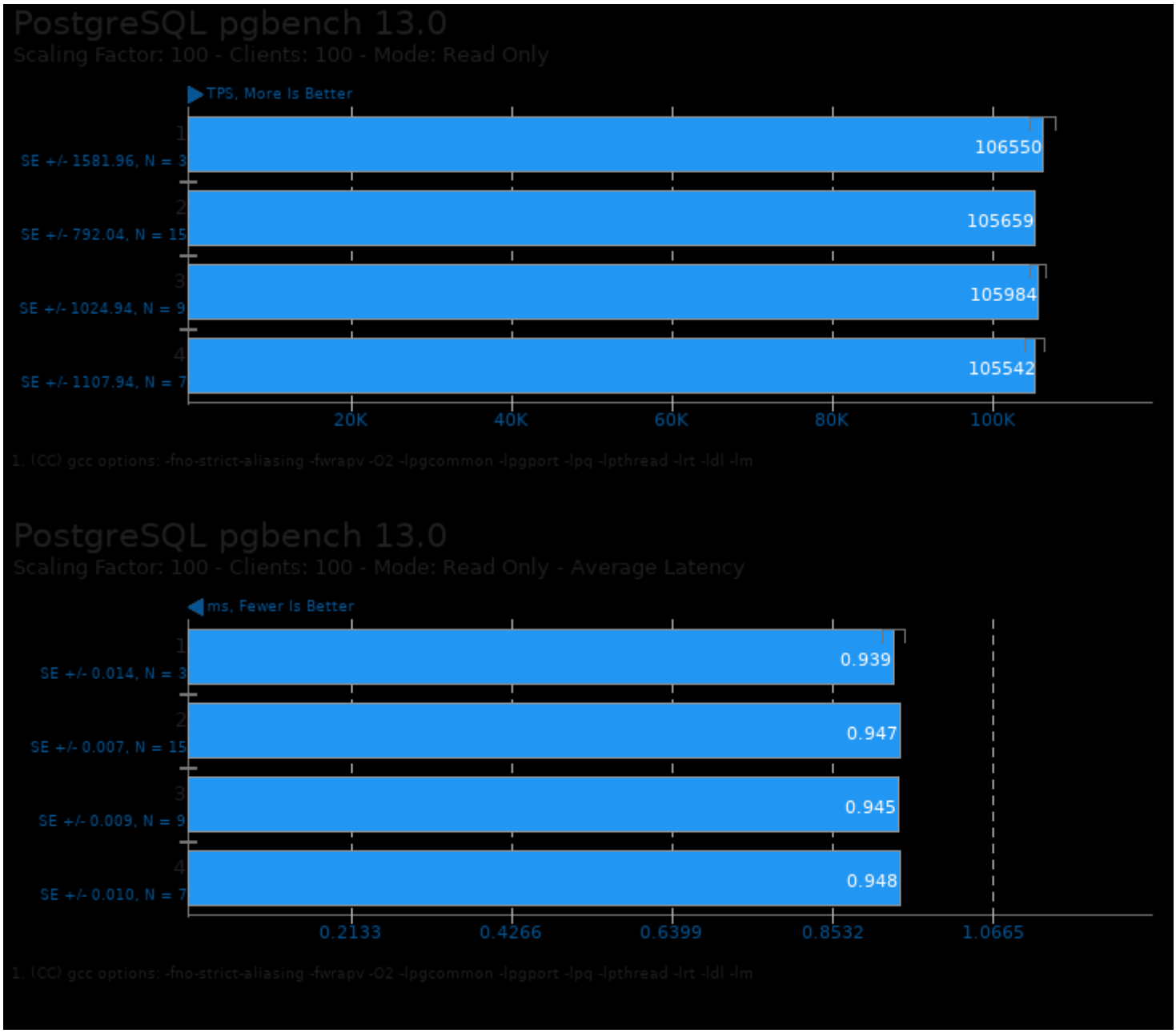
pgbench xeon



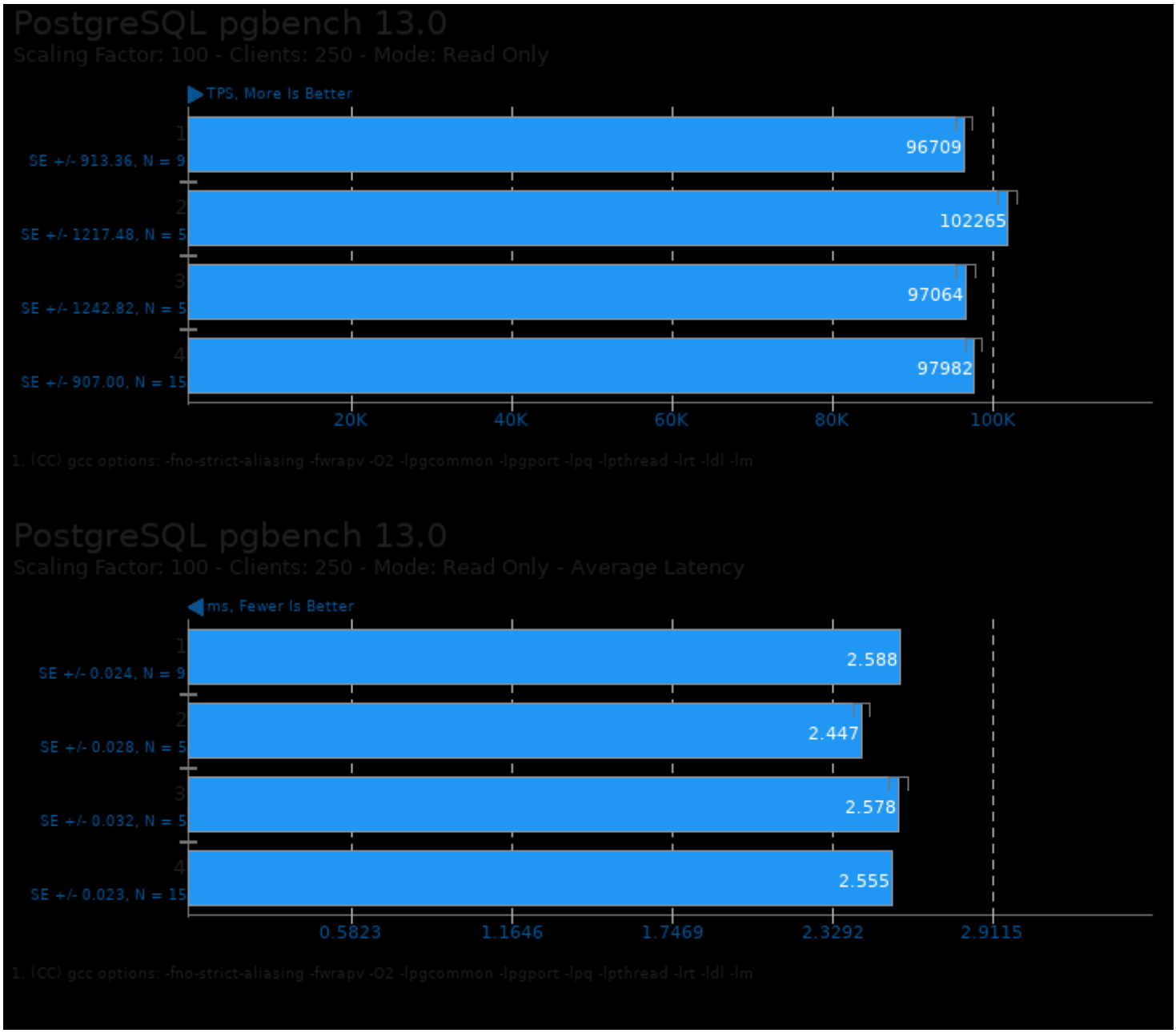
pgbench xeon



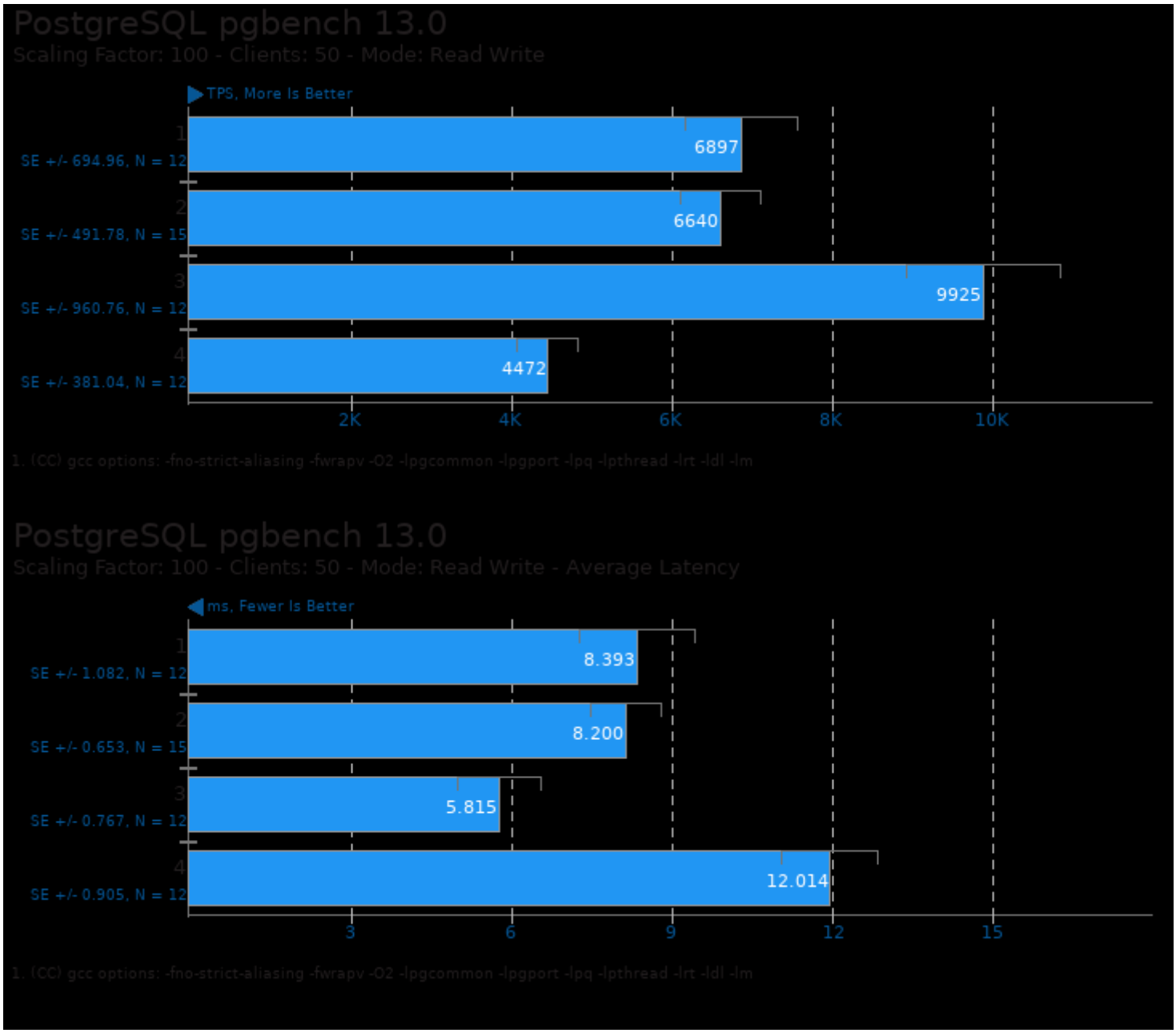
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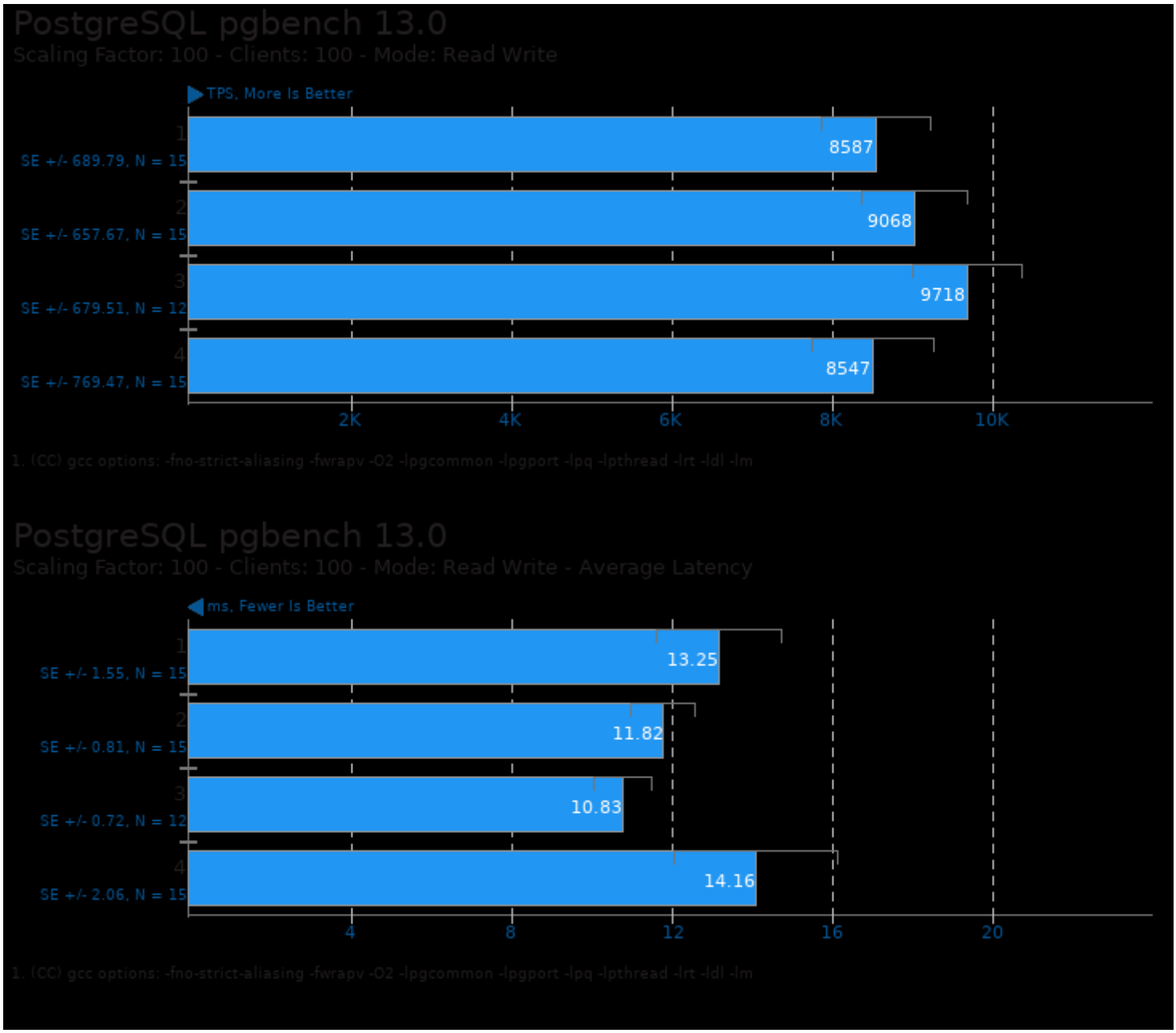


pgbench xeon

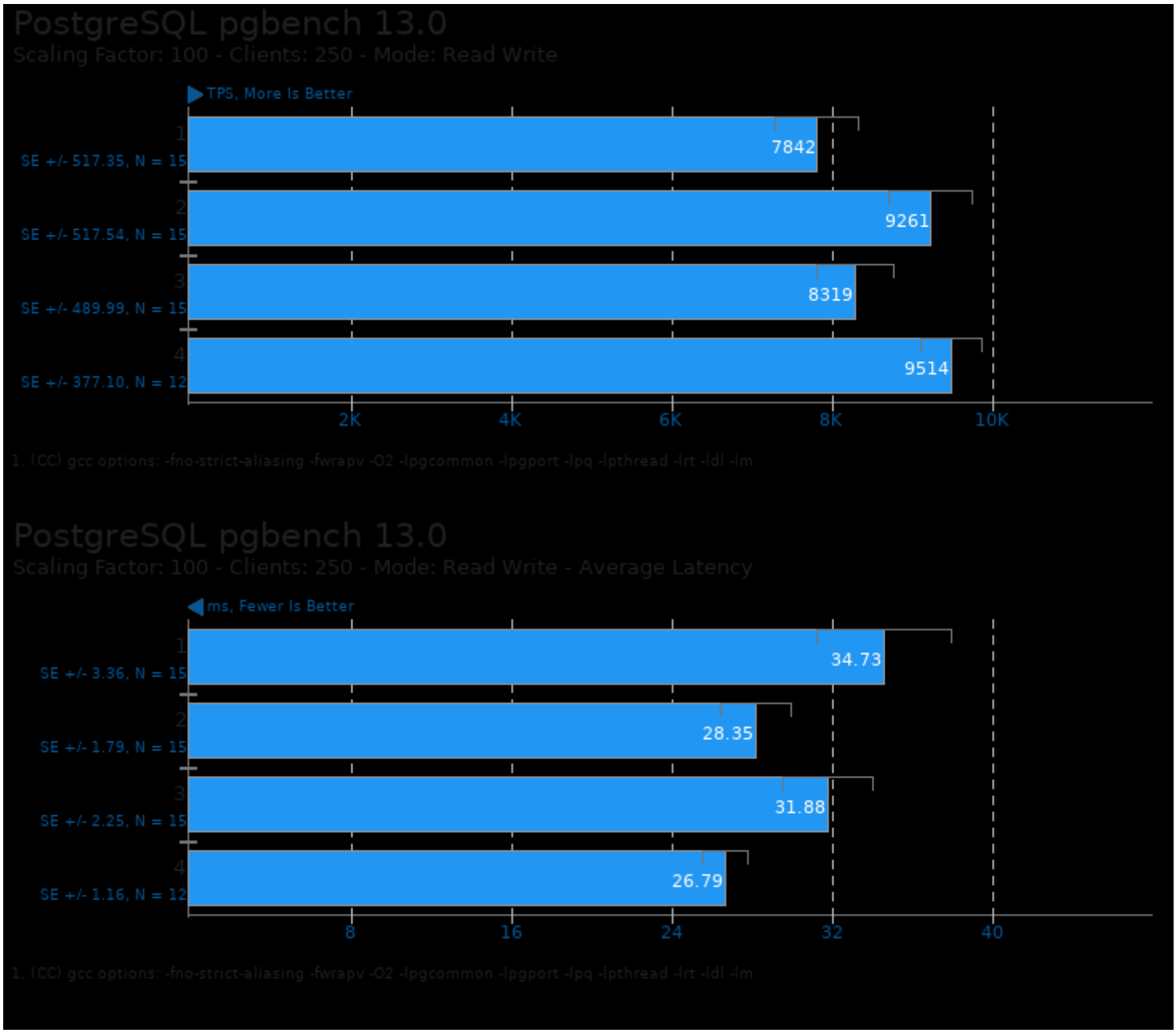


pgbench xeon




PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Write
TPS, More Is Better
1
SE +/- 689.79, N = 15
8587
2
SE +/- 657.67, N = 15
9068
3
SE +/- 679.51, N = 12
9718
4
SE +/- 769.47, N = 15
8547
2K
4K
6K
8K
10K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
SE +/- 1.55, N = 15
13.25
2
SE +/- 0.81, N = 15
11.82
3
SE +/- 0.72, N = 12
10.83
4
SE +/- 2.06, N = 15
14.16
4
8
12
16
20
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

pgbench xeon



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:41.