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nginx-redis-system

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3801 BIOS) and AMD Radeon RX 6700/6700 XT / 6800M 12GB on Ubuntu 21.10 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 53% of the tests.

Test Systems:

1

2

3

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1000GB Sabrent Rocket 4.0

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Plus, Graphics: AMD Radeon RX 6700/6700 XT / 6800M 12GB (2855/1000MHz), Audio: AMD Device ab28, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

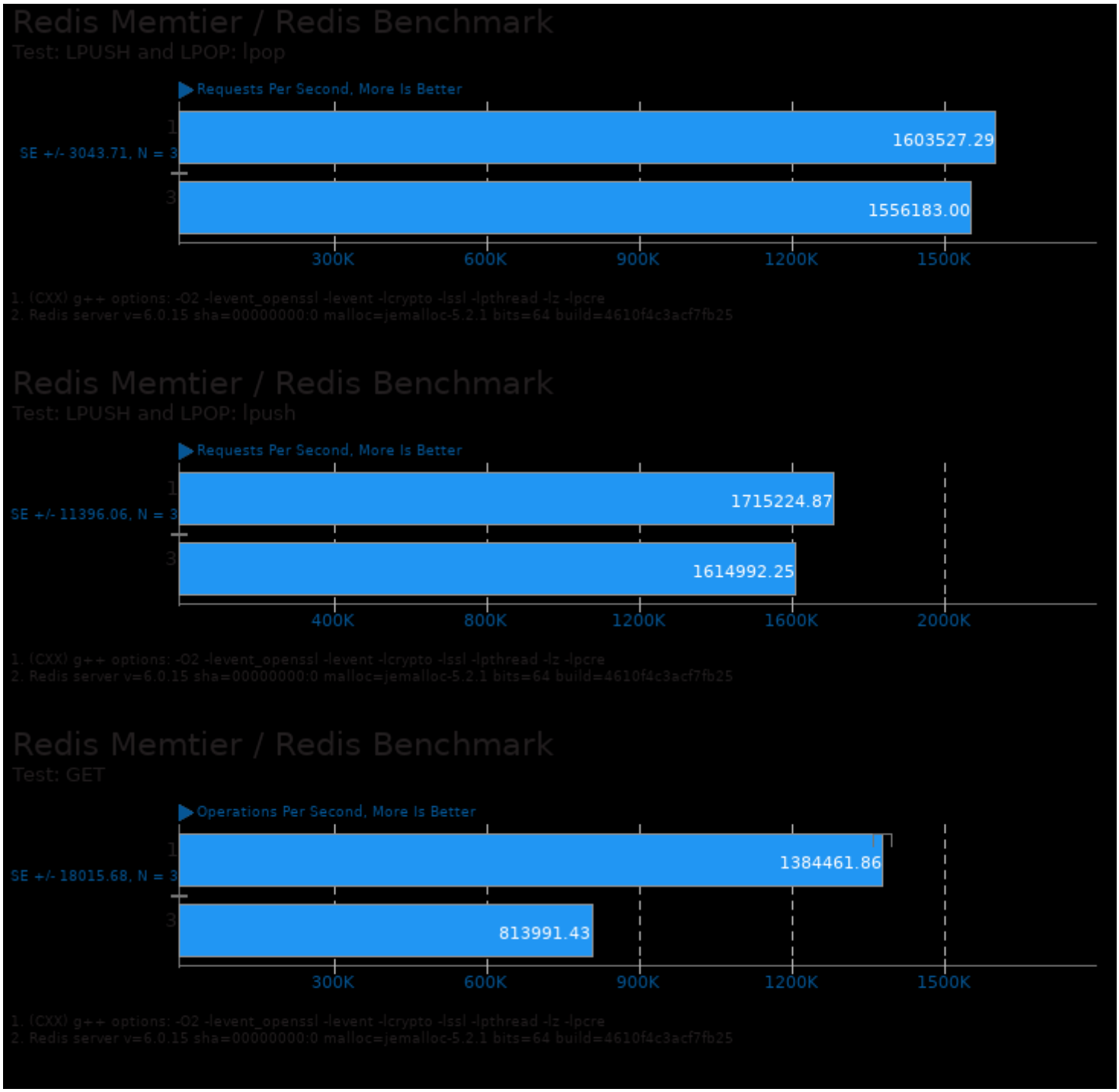
OS: Ubuntu 21.10, Kernel: 5.15.0-rc2-3reverts (x86_64) 20210922, Desktop: GNOME Shell 40.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.2.2 (LLVM 12.0.1), Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

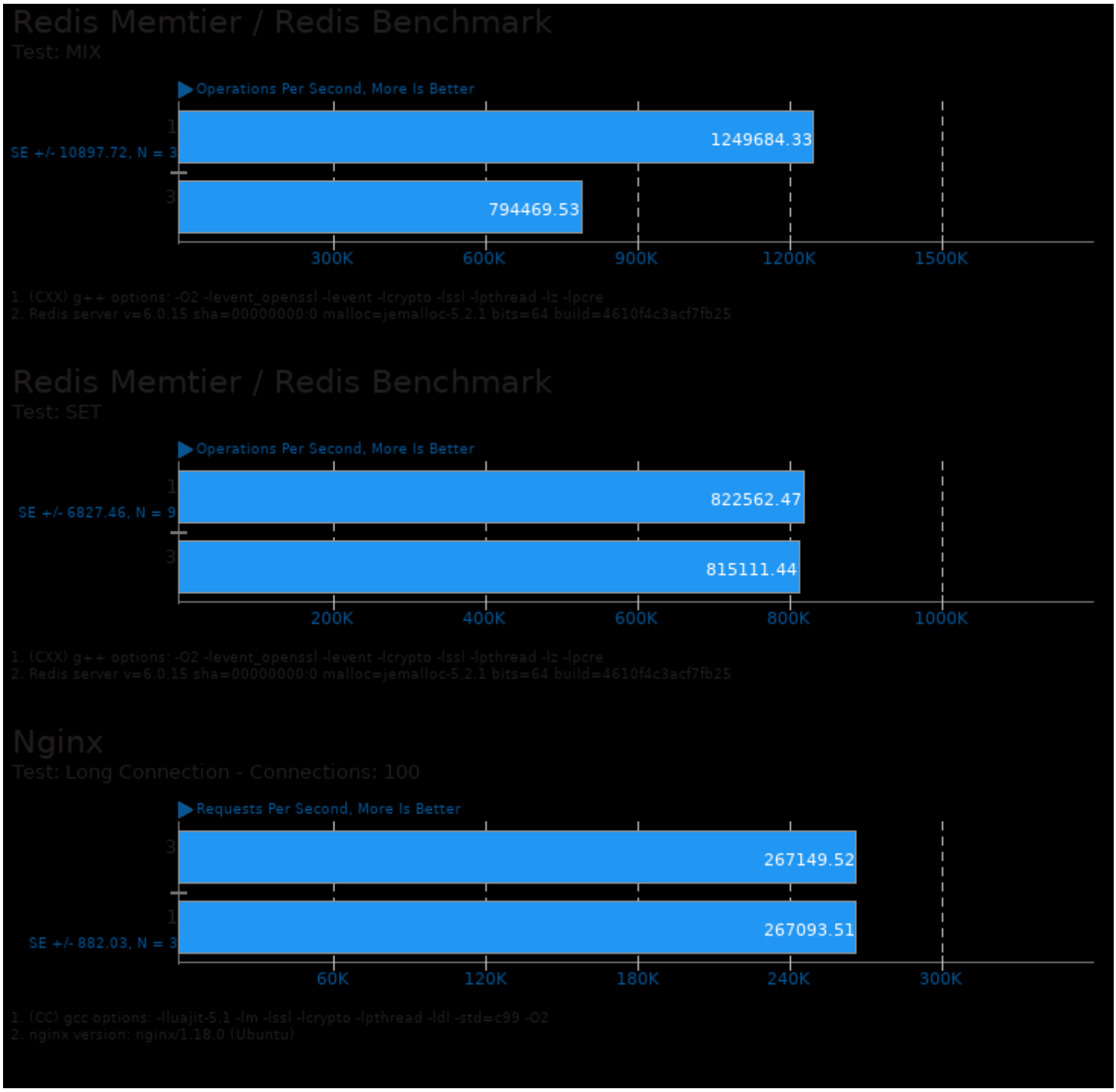
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201016
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

	1	2	3
Redis Memtier / Redis Benchmark - L.a.L.I (Reqs/sec)	**1603527**		**1556183**
Normalized	100%		97.05%
Standard Deviation	0.3%		
Redis Memtier / Redis Benchmark - L.a.L.I (Reqs/sec)	**1715225**		**1614992**
Normalized	100%		94.16%
Standard Deviation	1.2%		
Redis Memtier / Redis Benchmark - GET (Operations/sec)	**1384462**		**813991**
Normalized	100%		58.79%
Standard Deviation	2.3%		
Redis Memtier / Redis Benchmark - MIX (Operations/sec)	**1249684**		**794470**
Normalized	100%		63.57%
Standard Deviation	1.5%		
Redis Memtier / Redis Benchmark - SET (Operations/sec)	**822562**		**815111**
Normalized	100%		99.09%
Standard Deviation	2.5%		
Nginx - Long Connection - 100 (Reqs/sec)	**267094**		**267150**
Normalized	99.98%		100%
Standard Deviation	0.6%		
Nginx - Long Connection - 500 (Reqs/sec)	**155558**		**147490**
Normalized	100%		94.81%
Standard Deviation	0.7%		
Nginx - Long Connection - 1000 (Reqs/sec)	**111103**		**111220**
Normalized	99.89%		100%
Standard Deviation	0.8%		
Nginx - Short Connection - 100 (Reqs/sec)	**145451**		**144606**
Normalized	100%		99.42%
Standard Deviation	0.2%		

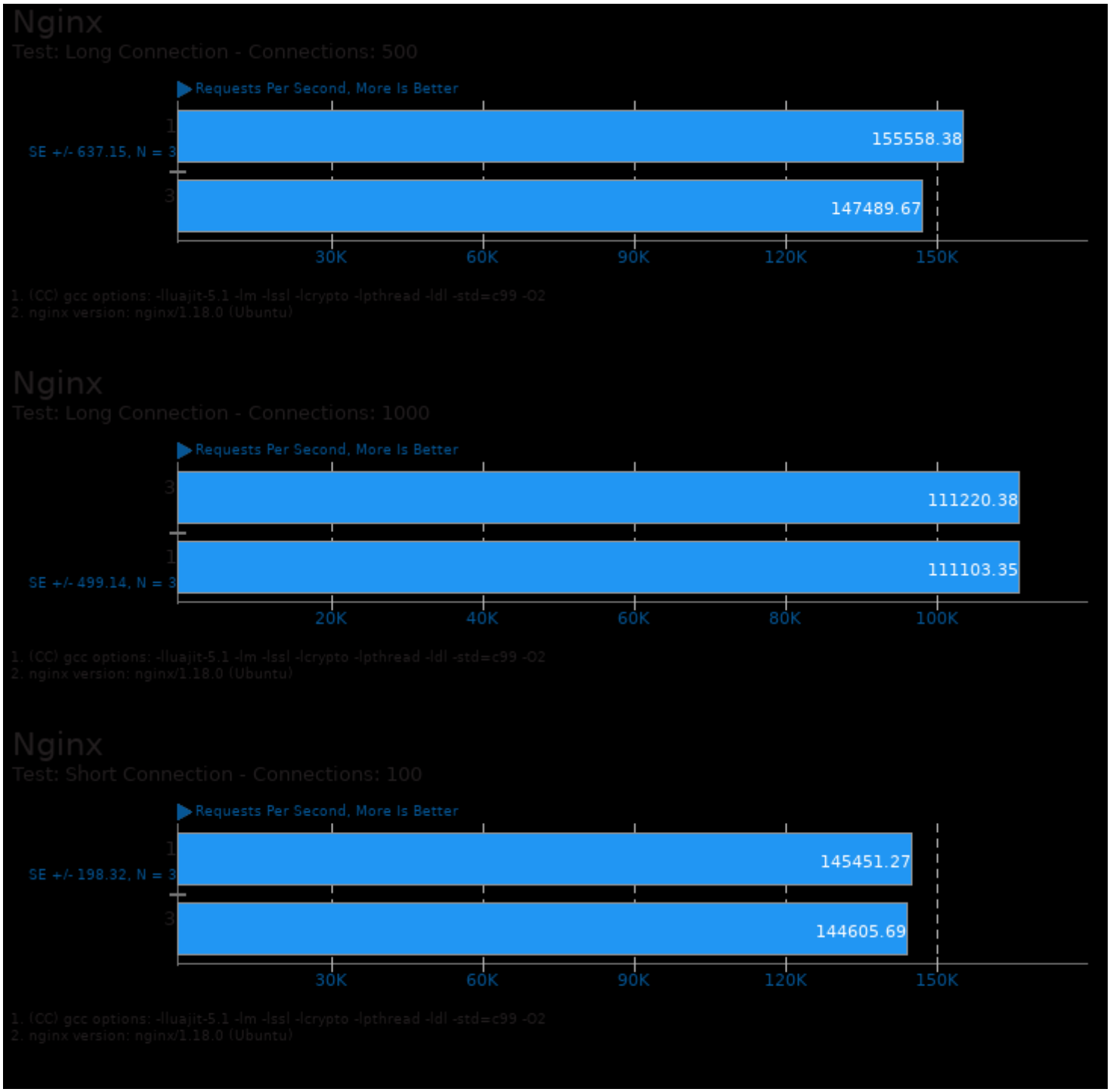
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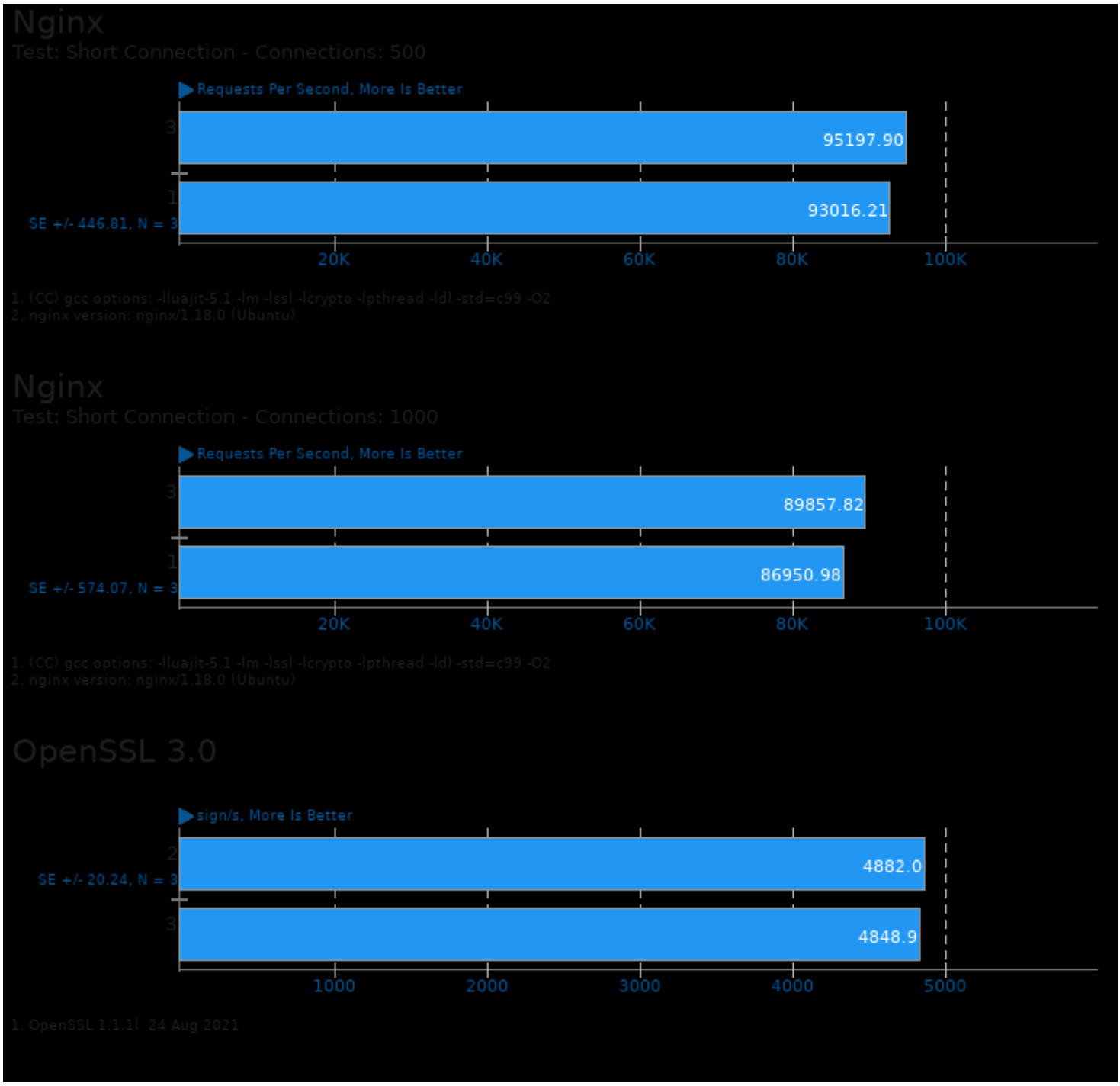
Nginx - Short Connection - 500 (Reqs/sec)	**93016**		**95198**
Normalized	97.71%		100%
Standard Deviation	0.8%		
Nginx - Short Connection - 1000 (Reqs/sec)	**86951**		**89858**
Normalized	96.77%		100%
Standard Deviation	1.1%		
OpenSSL (sign/s)		**4882**	**4849**
Normalized		100%	99.32%
Standard Deviation		0.7%	
OpenSSL (verify/s)		**316194**	**314315**
Normalized		100%	99.41%
Standard Deviation		0.4%	

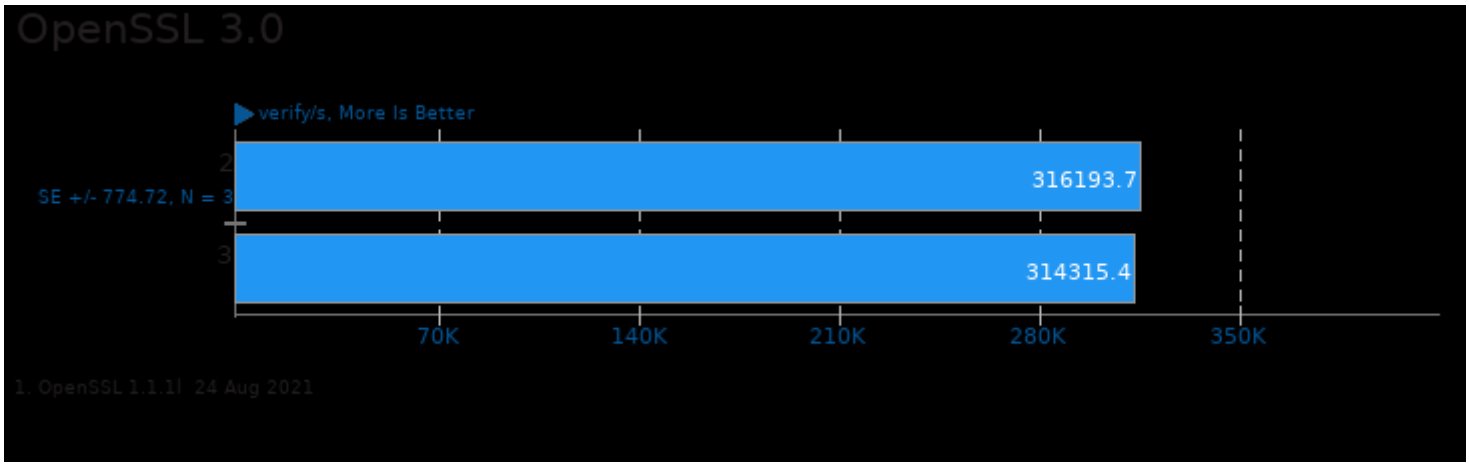

Redis Memtier / Redis Benchmark
Test: LPUSH and LPOP: lpop
Requests Per Second, More Is Better
1
SE +/- 3043.71, N = 3
1603527.29
3
1556183.00
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre
2. Redis server v=6.0.15 sha=00000000:0 malloc=jemalloc-5.2.1 bits=64 build=4610f4c3acf7fb25
Redis Memtier / Redis Benchmark
Test: LPUSH and LPOP: lpush
Requests Per Second, More Is Better
1
SE +/- 11396.06, N = 3
1715224.87
3
1614992.25
400K
800K
1200K
1600K
2000K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre
2. Redis server v=6.0.15 sha=00000000:0 malloc=jemalloc-5.2.1 bits=64 build=4610f4c3acf7fb25
Redis Memtier / Redis Benchmark
Test: GET
Operations Per Second, More Is Better
1
SE +/- 18015.68, N = 3
1384461.86
3
813991.43
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre
2. Redis server v=6.0.15 sha=00000000:0 malloc=jemalloc-5.2.1 bits=64 build=4610f4c3acf7fb25


Redis Memtier / Redis Benchmark
Test: MIX
Operations Per Second, More Is Better
1
1249684.33
SE +/- 10897.72, N = 3
3
794469.53
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre
2. Redis server v=6.0.15 sha=00000000:0 malloc=jemalloc-5.2.1 bits=64 build=4610f4c3acf7fb25
Redis Memtier / Redis Benchmark
Test: SET
Operations Per Second, More Is Better
1
822562.47
SE +/- 6827.46, N = 9
3
815111.44
200K
400K
600K
800K
1000K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre
2. Redis server v=6.0.15 sha=00000000:0 malloc=jemalloc-5.2.1 bits=64 build=4610f4c3acf7fb25
Nginx
Test: Long Connection - Connections: 100
Requests Per Second, More Is Better
3
267149.52
1
267093.51
SE +/- 882.03, N = 3
60K
120K
180K
240K
300K
1. (CC) gcc options: -lluajit-5.1 -lm -lssl -lcrypto -lpthread -ldl -std=c99 -O2
2. nginx version: nginx/1.18.0 (Ubuntu)

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Nginx
Test: Short Connection - Connections: 500
Requests Per Second, More Is Better
3
95197.90
1
93016.21
SE +/- 446.81, N = 3
20K
40K
60K
80K
100K
1. (CC) gcc options: -lluajit-5.1 -lm -lssl -lcrypto -lpthread -ldl -std=c99 -O2
2. nginx version: nginx/1.18.0 (Ubuntu)
Nginx
Test: Short Connection - Connections: 1000
Requests Per Second, More Is Better
3
89857.82
1
86950.98
SE +/- 574.07, N = 3
20K
40K
60K
80K
100K
1. (CC) gcc options: -lluajit-5.1 -lm -lssl -lcrypto -lpthread -ldl -std=c99 -O2
2. nginx version: nginx/1.18.0 (Ubuntu)
OpenSSL 3.0
sign/s, More Is Better
2
4882.0
SE +/- 20.24, N = 3
3
4848.9
1000
2000
3000
4000
5000
1. OpenSSL 1.1.1l 24 Aug 2021



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