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samsung-850-ssd

Intel Core i7-7700K testing with a MSI Z270-A PRO (MS-7A71) v1.0 (1.60 BIOS) and MSI Intel HD 630 on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 42% of the tests.

Test Systems:

1

1a

2

3

samsung-850-ssd

Processor: Intel Core i7-7700K @ 4.50GHz (4 Cores / 8 Threads), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0 (1.60 BIOS), Chipset: Intel Xeon E3-1200 v6/7th + Z270, Memory: 16GB, Disk: 256GB Samsung SSD 850, Graphics: MSI Intel HD 630 (1150MHz), Audio: Realtek ALC892, Monitor: LG Ultra HD, Network: Realtek RTL8111/8168/8411

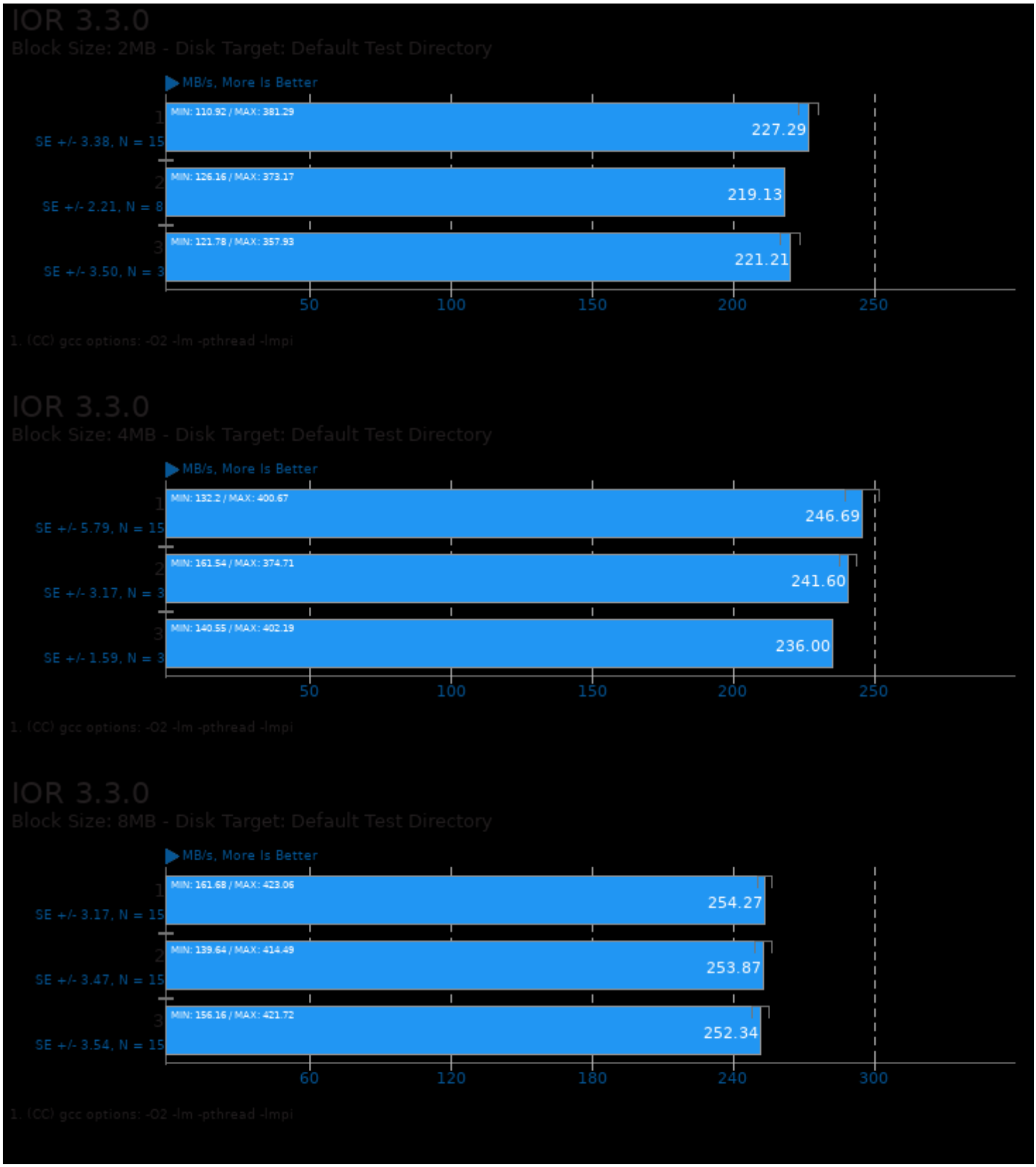
OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc8daily20201011-generic (x86_64) 20201010, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenCL: OpenCL 2.1, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

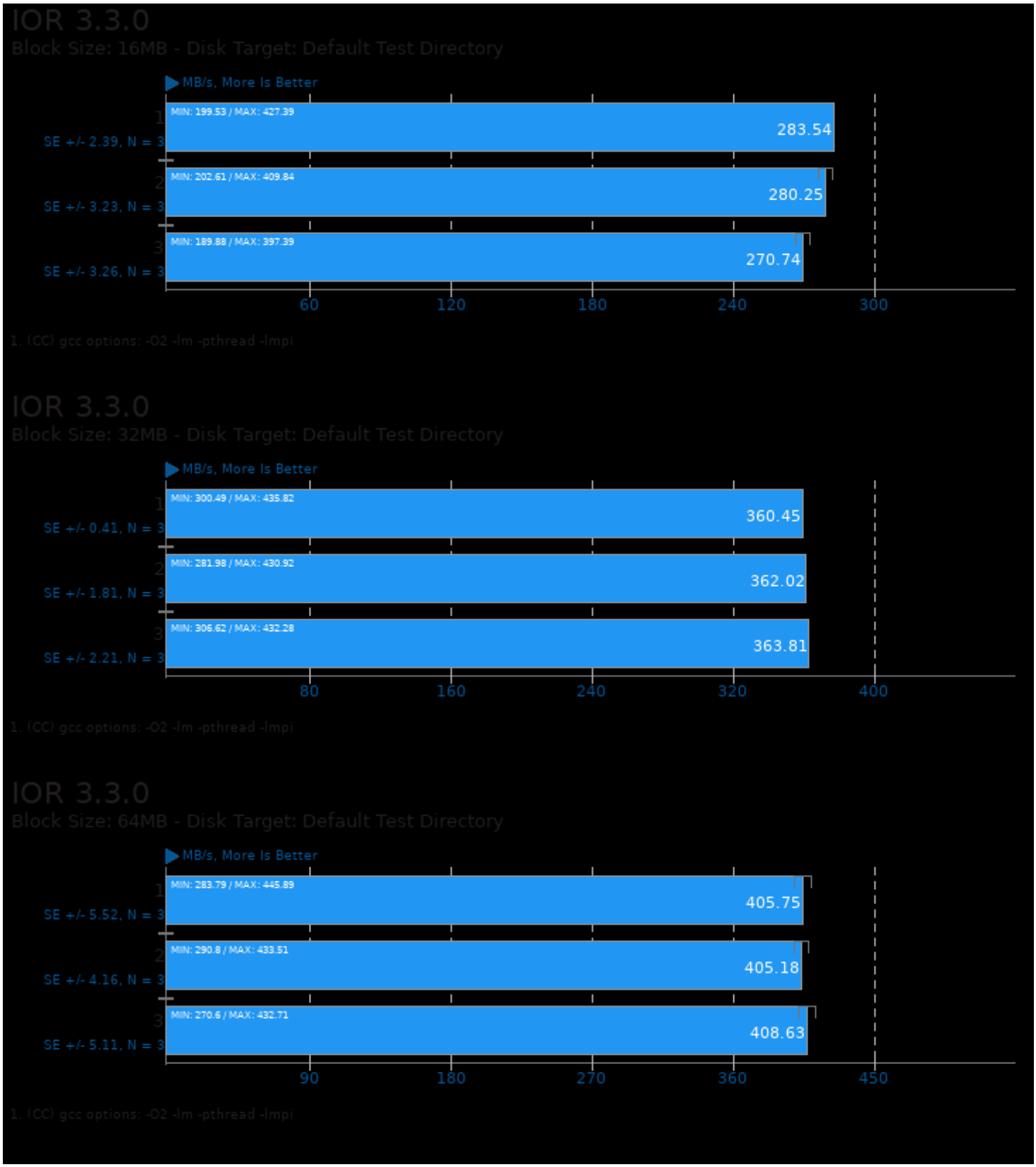
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/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
Disk Notes: MQ-DEADLINE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0xde - Thermald 1.9.1
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 and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

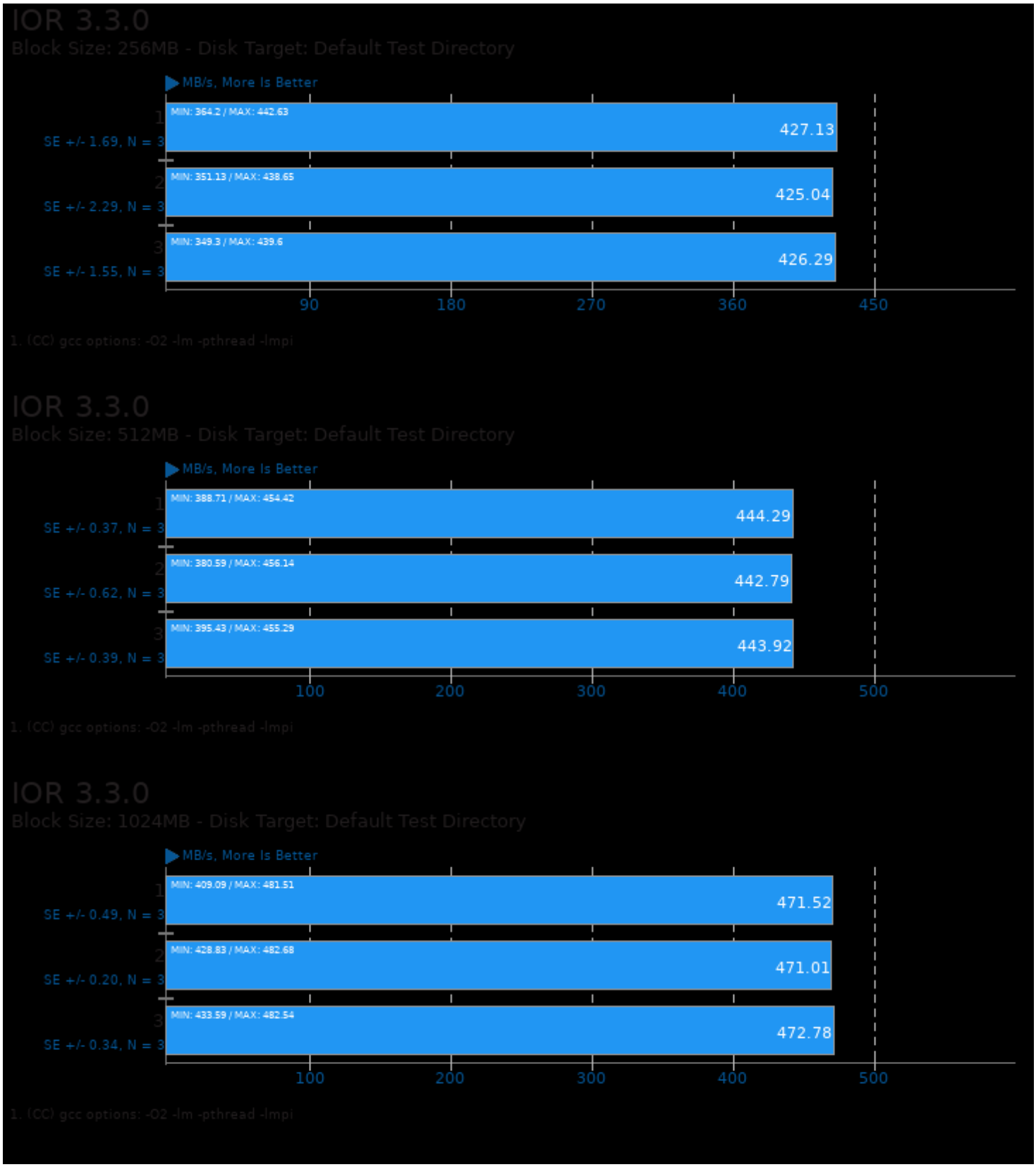
	1	1a	2	3
IOR - 2MB (MB/s)	**227.29**		**219.13**	221.21
Normalized	100%		96.41%	97.33%
Standard Deviation	5.8%		2.8%	2.7%
IOR - 4MB (MB/s)	**246.69**		241.60	**236.00**
Normalized	100%		97.94%	95.67%
Standard Deviation	9.1%		2.3%	1.2%
IOR - 8MB (MB/s)	**254.27**		253.87	**252.34**
Normalized	100%		99.84%	99.24%
Standard Deviation	4.8%		5.3%	5.4%
IOR - 16MB (MB/s)	**283.54**		280.25	**270.74**
Normalized	100%		98.84%	95.49%
Standard Deviation	1.5%		2%	2.1%
IOR - 32MB (MB/s)	**360.45**		362.02	**363.81**
Normalized	99.08%		99.51%	100%
Standard Deviation	0.2%		0.9%	1.1%
IOR - 64MB (MB/s)	405.75		**405.18**	**408.63**
Normalized	99.3%		99.16%	100%
Standard Deviation	2.4%		1.8%	2.2%
IOR - 256MB (MB/s)	**427.13**		**425.04**	426.29
Normalized	100%		99.51%	99.8%
Standard Deviation	0.7%		0.9%	0.6%
IOR - 512MB (MB/s)	**444.29**		**442.79**	443.92
Normalized	100%		99.66%	99.92%
Standard Deviation	0.1%		0.2%	0.2%
IOR - 1024MB (MB/s)	471.52		**471.01**	**472.78**
Normalized	99.73%		99.63%	100%
Standard Deviation	0.2%		0.1%	0.1%
QMCPACK - simple-H2O (Execution Time - sec)	**25.094**		**24.806**	24.948
Normalized	98.85%		100%	99.43%
Standard Deviation	0.8%		0.4%	1%

samsung-850-ssd

Etcpak - DXT1 (Mpx/s)	**1340**	1344	**1350**
Normalized	99.23%	99.52%	100%
Standard Deviation	0%	0.5%	0%
Etcpak - ETC1 (Mpx/s)	**337.401**	337.267	**337.146**
Normalized	100%	99.96%	99.92%
Standard Deviation	0.2%	0.2%	0.2%
Etcpak - ETC2 (Mpx/s)	**191.771**	191.742	**191.430**
Normalized	100%	99.98%	99.82%
Standard Deviation	0%	0%	0.3%
Etcpak - ETC1 + Dithering (Mpx/s)	**321.788**	321.736	**321.448**
Normalized	100%	99.98%	99.89%
Standard Deviation	0.1%	0%	0.1%

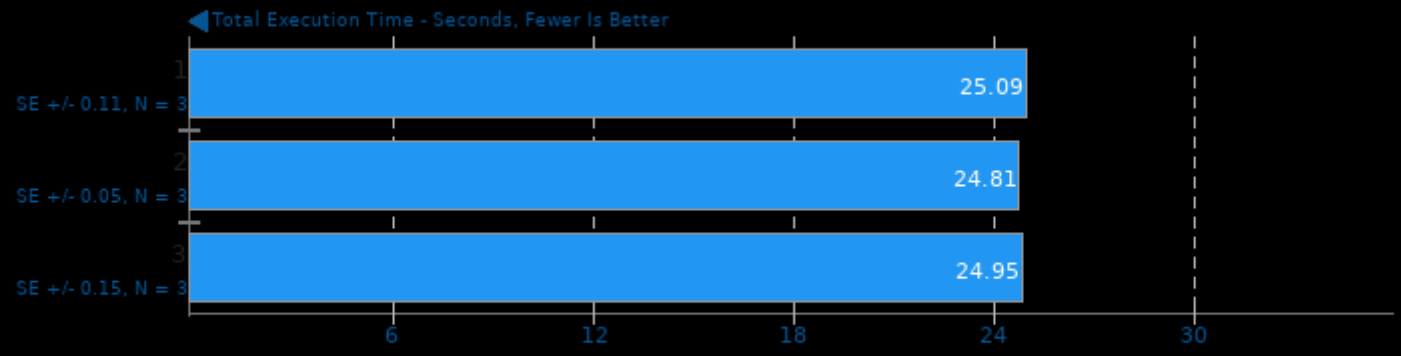

IOR 3.3.0
Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 110.92 / MAX: 381.29
227.29
SE +/- 3.38, N = 15
2
MIN: 126.16 / MAX: 373.17
219.13
SE +/- 2.21, N = 8
3
MIN: 121.78 / MAX: 357.93
221.21
SE +/- 3.50, N = 3
50
100
150
200
250
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 4MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 132.2 / MAX: 400.67
246.69
SE +/- 5.79, N = 15
2
MIN: 161.54 / MAX: 374.71
241.60
SE +/- 3.17, N = 3
3
MIN: 140.55 / MAX: 402.19
236.00
SE +/- 1.59, N = 3
50
100
150
200
250
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 161.68 / MAX: 423.06
254.27
SE +/- 3.17, N = 15
2
MIN: 139.64 / MAX: 414.49
253.87
SE +/- 3.47, N = 15
3
MIN: 156.16 / MAX: 421.72
252.34
SE +/- 3.54, N = 15
60
120
180
240
300
1. (CC) gcc options: -O2 -lm -pthread -lmpi


IOR 3.3.0
Block Size: 16MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 199.53 / MAX: 427.39
283.54
SE +/- 2.39, N = 3
2
MIN: 202.61 / MAX: 409.84
280.25
SE +/- 3.23, N = 3
3
MIN: 189.88 / MAX: 397.39
270.74
SE +/- 3.26, N = 3
60
120
180
240
300
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 32MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 300.49 / MAX: 435.82
360.45
SE +/- 0.41, N = 3
2
MIN: 281.98 / MAX: 430.92
362.02
SE +/- 1.81, N = 3
3
MIN: 306.62 / MAX: 432.28
363.81
SE +/- 2.21, N = 3
80
160
240
320
400
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 64MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 283.79 / MAX: 445.89
405.75
SE +/- 5.52, N = 3
2
MIN: 290.8 / MAX: 433.51
405.18
SE +/- 4.16, N = 3
3
MIN: 270.6 / MAX: 432.71
408.63
SE +/- 5.11, N = 3
90
180
270
360
450
1. (CC) gcc options: -O2 -lm -pthread -lmpi


IOR 3.3.0
Block Size: 256MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 364.2 / MAX: 442.63
427.13
SE +/- 1.69, N = 3
2
MIN: 351.13 / MAX: 438.65
425.04
SE +/- 2.29, N = 3
3
MIN: 349.3 / MAX: 439.6
426.29
SE +/- 1.55, N = 3
90
180
270
360
450
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 512MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 388.71 / MAX: 454.42
444.29
SE +/- 0.37, N = 3
2
MIN: 380.59 / MAX: 456.14
442.79
SE +/- 0.62, N = 3
3
MIN: 395.43 / MAX: 455.29
443.92
SE +/- 0.39, N = 3
100
200
300
400
500
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 1024MB - Disk Target: Default Test Directory
MB/s, More Is Better
1
MIN: 409.09 / MAX: 481.51
471.52
SE +/- 0.49, N = 3
2
MIN: 428.83 / MAX: 482.68
471.01
SE +/- 0.20, N = 3
3
MIN: 433.59 / MAX: 482.54
472.78
SE +/- 0.34, N = 3
100
200
300
400
500
1. (CC) gcc options: -O2 -lm -pthread -lmpi

QMCPACK 3.10

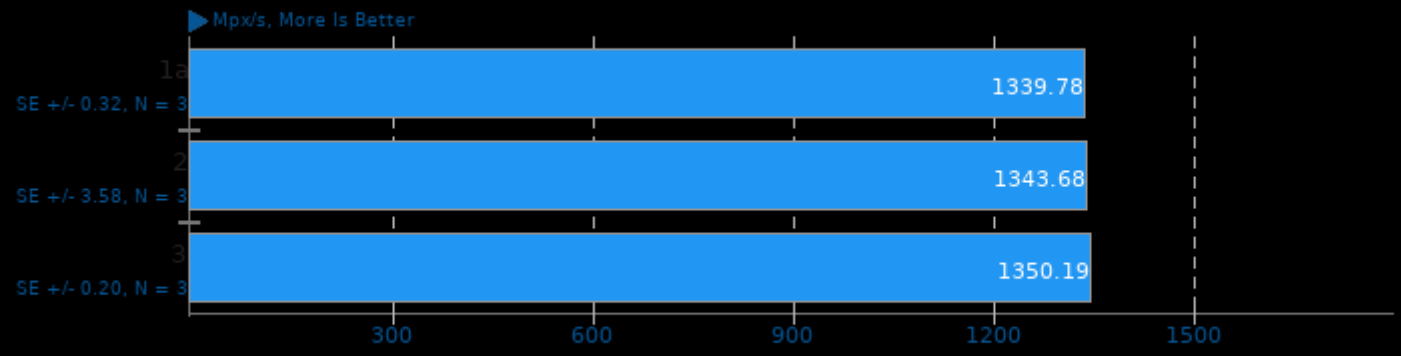
Input: simple-H2O



1. (CXX) g++ options: -fopenmp -finline-limit=1000 -fstrict-aliasing -funroll-all-loops -march=native -O3 -fomit-frame-pointer -ffast-math -pthread -lm

Etcpak 0.7

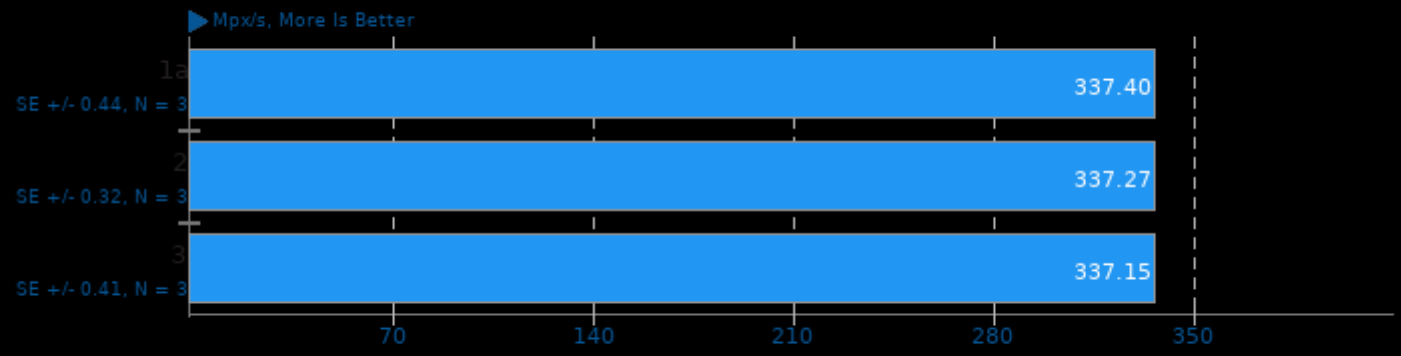
Configuration: DXT1



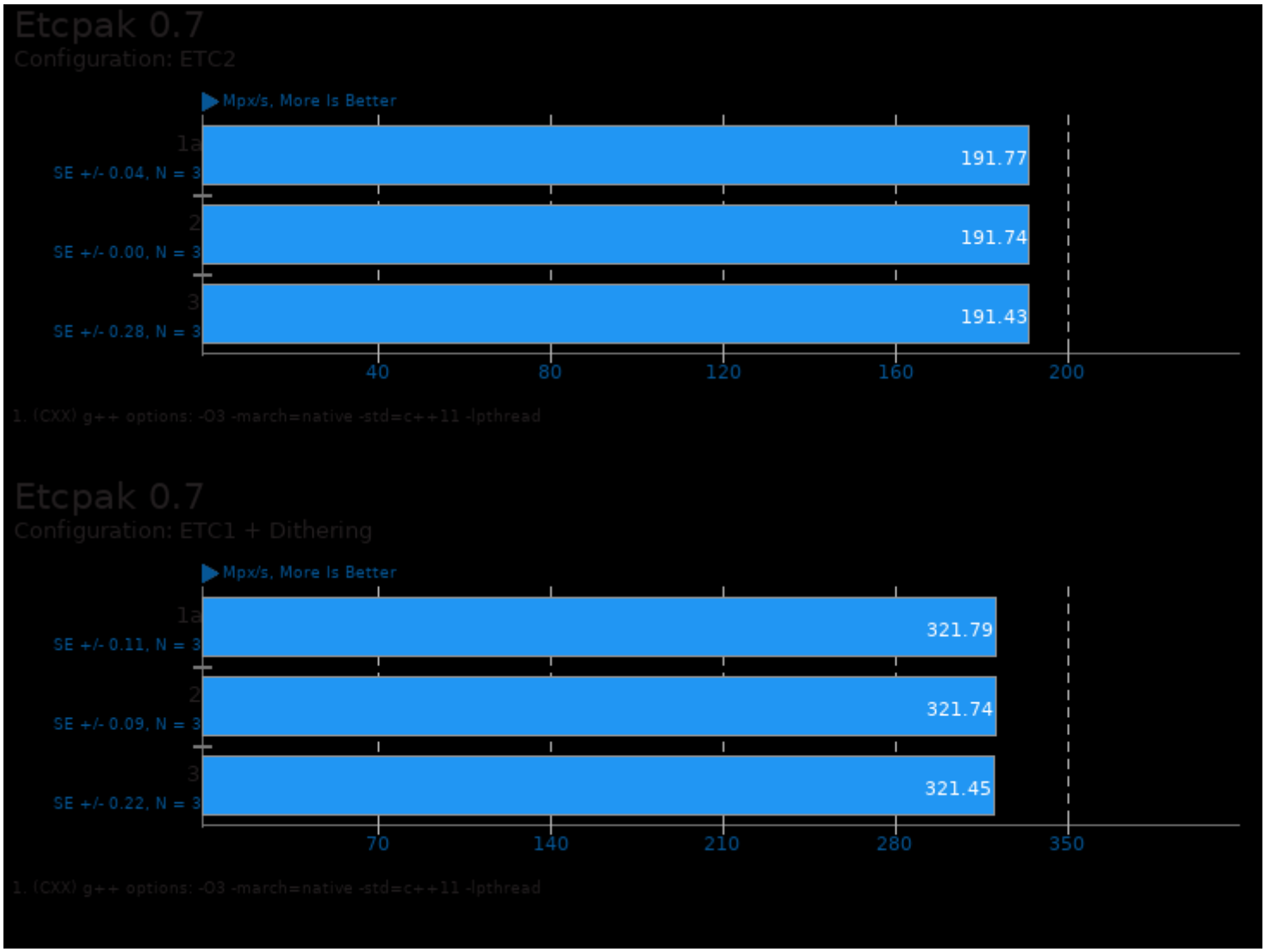
1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

Etcpak 0.7

Configuration: ETC1



1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 03:03.