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Intel Core i7-9750H testing with a Notebook P95_96_97Ex Rx (1.07.13MIN29 BIOS) and Intel UHD 630 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

3 had the most wins, coming in first place for 44% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.009x the speed of the slowest (2). 3 was 0.997x the speed of 1 and 2 was 0.994x the speed of 3.

Test Systems:

1

2

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3

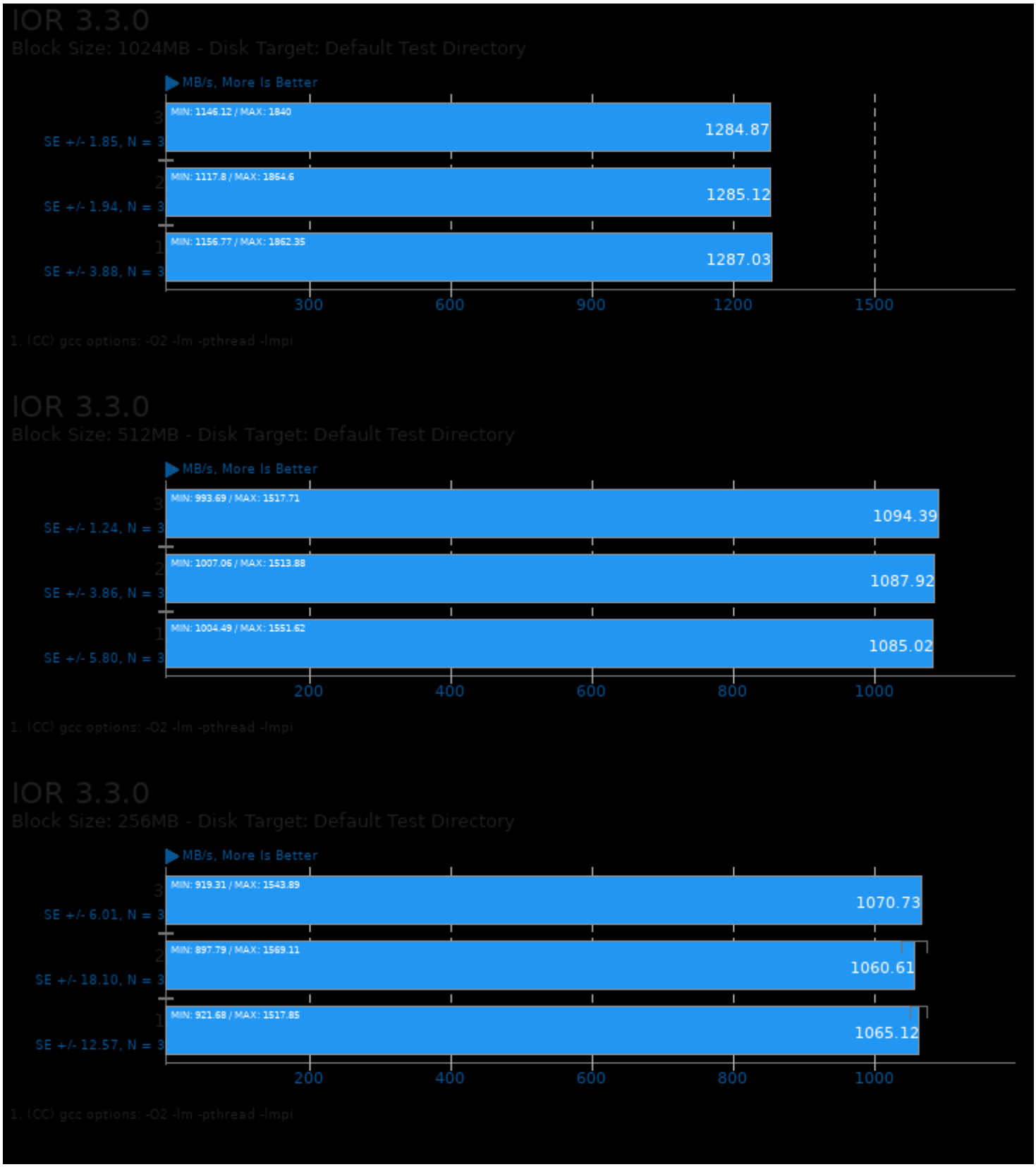
Processor: Intel Core i7-9750H @ 4.50GHz (6 Cores / 12 Threads), Motherboard: Notebook P95_96_97Ex Rx (1.07.13MIN29 BIOS), Chipset: Intel Cannon Lake PCH, Memory: 32GB, Disk: 1000GB Samsung SSD 970 EVO Plus 1TB, Graphics: Intel UHD 630 3GB (1150MHz), Audio: Realtek ALC1220, Network: Realtek RTL8111/8168/8411 + Intel-AC 9560

OS: Ubuntu 20.04, Kernel: 5.8.0-38-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, Vulkan: 1.2.131, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

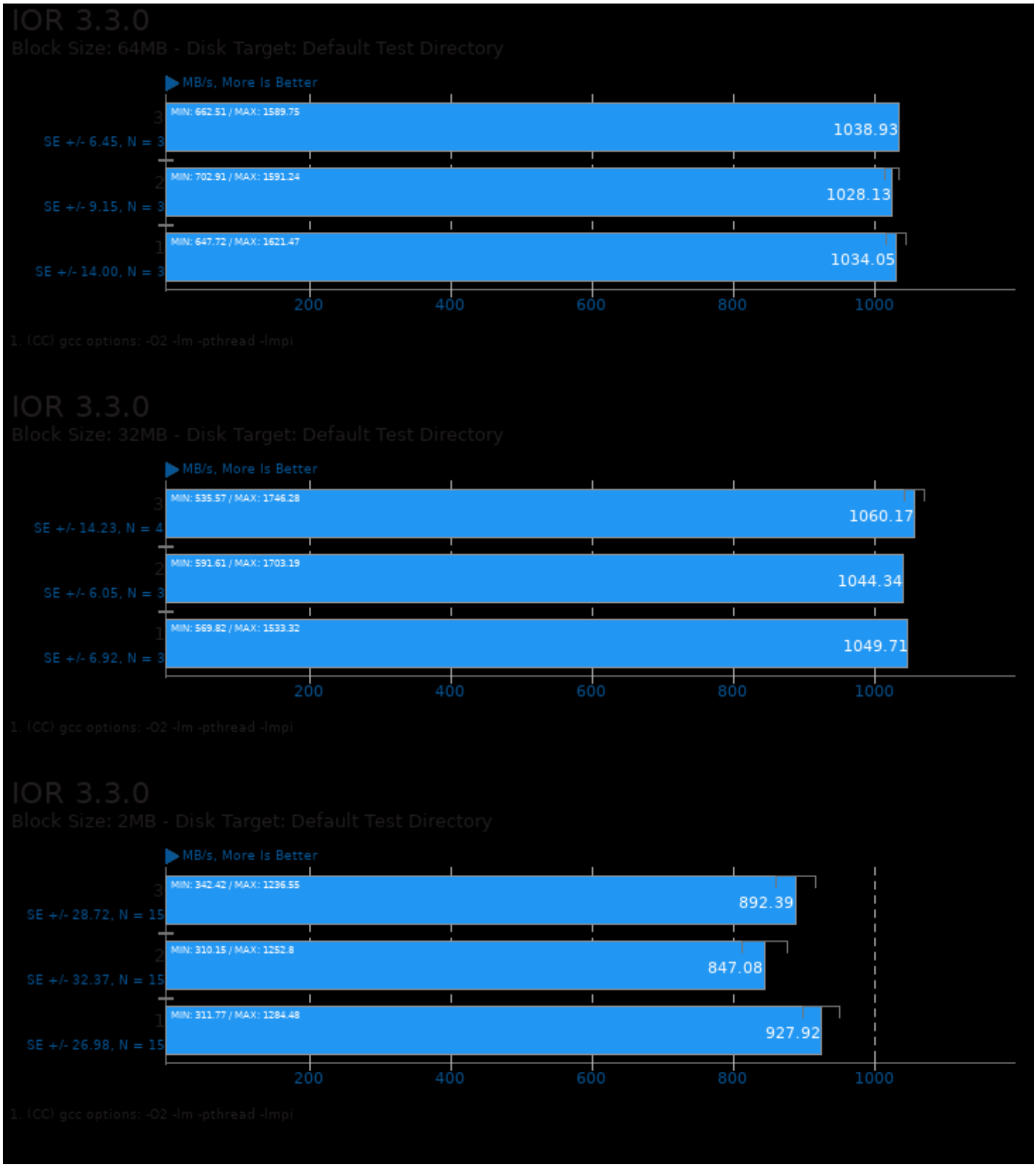
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --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: NONE / 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: Not affected

	1	2	3
IOR - 1024MB (MB/s)	**1287**	1285	**1285**
Normalized	100%	99.85%	99.83%
Standard Deviation	0.5%	0.3%	0.2%
IOR - 512MB (MB/s)	**1085**	1088	**1094**
Normalized	99.14%	99.41%	100%
Standard Deviation	0.9%	0.6%	0.2%
IOR - 256MB (MB/s)	1065	**1061**	**1071**
Normalized	99.48%	99.05%	100%
Standard Deviation	2%	3%	1%
IOR - 64MB (MB/s)	1034	**1028**	**1039**
Normalized	99.53%	98.96%	100%
Standard Deviation	2.3%	1.5%	1.1%
IOR - 32MB (MB/s)	1050	**1044**	**1060**
Normalized	99.01%	98.51%	100%
Standard Deviation	1.1%	1%	2.7%
IOR - 2MB (MB/s)	**927.92**	**847.08**	892.39
Normalized	100%	91.29%	96.17%
Standard Deviation	11.3%	14.8%	12.5%
IOR - 16MB (MB/s)	1170	**1184**	**1168**
Normalized	98.78%	100%	98.6%
Standard Deviation	1.4%	2.7%	0.9%
IOR - 4MB (MB/s)	1140	**1152**	**1124**
Normalized	98.9%	100%	97.58%
Standard Deviation	1.1%	0.2%	4.2%
IOR - 8MB (MB/s)	**1317**	1316	**1313**
Normalized	100%	99.88%	99.63%
Standard Deviation	0.8%	1.9%	1.3%

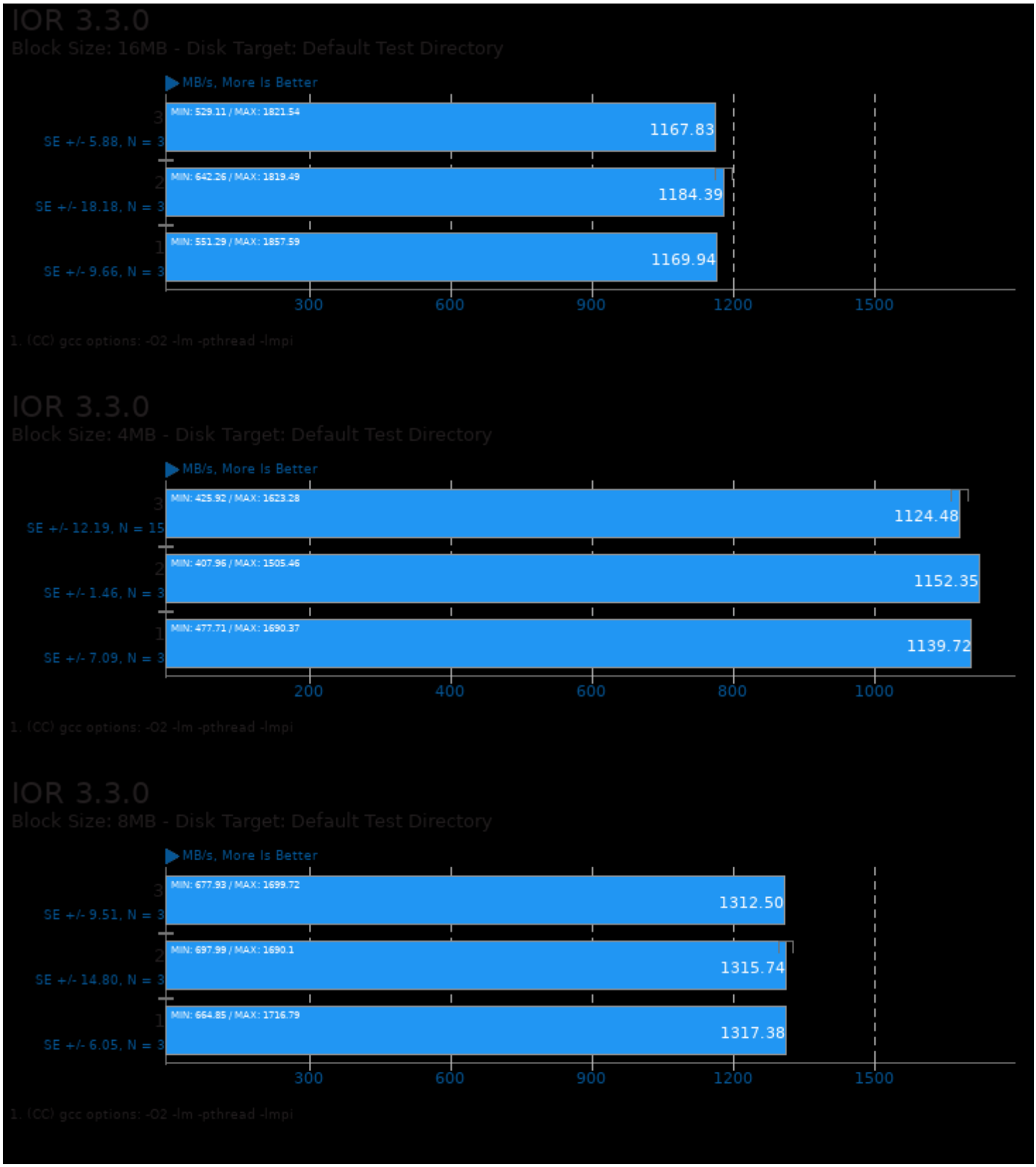
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IOR 3.3.0
Block Size: 1024MB - Disk Target: Default Test Directory
MB/s, More Is Better
MIN: 1146.12 / MAX: 1840
1284.87
SE +/- 1.85, N = 3
MIN: 1117.8 / MAX: 1864.6
1285.12
SE +/- 1.94, N = 3
MIN: 1156.77 / MAX: 1862.35
1287.03
SE +/- 3.88, N = 3
300
600
900
1200
1500
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
MIN: 993.69 / MAX: 1517.71
1094.39
SE +/- 1.24, N = 3
MIN: 1007.06 / MAX: 1513.88
1087.92
SE +/- 3.86, N = 3
MIN: 1004.49 / MAX: 1551.62
1085.02
SE +/- 5.80, N = 3
200
400
600
800
1000
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
MIN: 919.31 / MAX: 1543.89
1070.73
SE +/- 6.01, N = 3
MIN: 897.79 / MAX: 1569.11
1060.61
SE +/- 18.10, N = 3
MIN: 921.68 / MAX: 1517.85
1065.12
SE +/- 12.57, N = 3
200
400
600
800
1000
1. (CC) gcc options: -O2 -lm -pthread -lmpi

ior new


IOR 3.3.0
Block Size: 64MB - Disk Target: Default Test Directory
MB/s, More Is Better
MIN: 662.51 / MAX: 1589.75
1038.93
SE +/- 6.45, N = 3
MIN: 702.91 / MAX: 1591.24
1028.13
SE +/- 9.15, N = 3
MIN: 647.72 / MAX: 1621.47
1034.05
SE +/- 14.00, N = 3
200
400
600
800
1000
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
MIN: 535.57 / MAX: 1746.28
1060.17
SE +/- 14.23, N = 4
MIN: 591.61 / MAX: 1703.19
1044.34
SE +/- 6.05, N = 3
MIN: 569.82 / MAX: 1533.32
1049.71
SE +/- 6.92, N = 3
200
400
600
800
1000
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.3.0
Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
MIN: 342.42 / MAX: 1236.55
892.39
SE +/- 28.72, N = 15
MIN: 310.15 / MAX: 1252.8
847.08
SE +/- 32.37, N = 15
MIN: 311.77 / MAX: 1284.48
927.92
SE +/- 26.98, N = 15
200
400
600
800
1000
1. (CC) gcc options: -O2 -lm -pthread -lmpi

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This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 08:26.