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ten64satatest

Ten64 with Marvell 9215 SATA controller, 2 x Samsung 860 EVO 500GB

Automated Executive Summary

JMB585_2X_860_EVO_2 had the most wins, coming in first place for 92% of the tests.

Based on the geometric mean of all complete results, the fastest (JMB585_2X_860_EVO_2) was 1.387x the speed of the slowest (MRVL9215_2X_860_EVO).

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

SQLite (Timed SQLite Insertions) at 4.043x
Flexible IO Tester (Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory) at 2.722x
Flexible IO Tester (Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory) at 2.688x
Flexible IO Tester (Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory) at 1.825x
Flexible IO Tester (Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory) at 1.8x
FS-Mark (Test: 1000 Files, 1MB Size) at 1.203x

Flexible IO Tester (Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory) at 1.117x
Flexible IO Tester (Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory) at 1.109x
Flexible IO Tester (Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 1.099x
Flexible IO Tester (Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 1.097x.

Test Systems:

JMB585_2X_860_EVO_2

Processor: ARMv8 Cortex-A53 (8 Cores), Motherboard: traverse ten64 (2020.07-rc1-00404-g175d0de361-dirty BIOS), Memory: 3584MB, Disk: 230GB M.2 (P42) 3TE2 + 2 x 500GB Samsung SSD 860 + 15GB Seagate STORE N GO

OS: Debian 10, Kernel: 5.4.29-traverse-lts-5-4+21 (aarch64), Compiler: GCC 8.3.0, File-System: ext4

Compiler Notes: --build=aarch64-linux-gnu --disable-libphobos --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: NONE / relatime,rw / raid1 sdc1[1] sda1[0]
Python Notes: Python 2.7.16 + Python 3.7.3
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Not affected + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Not affected + tsx_async_abort: Not affected

MRVL9215_2X_860_EVO

Processor: ARMv8 Cortex-A53 (8 Cores), Motherboard: traverse ten64 (2020.07-rc1-00404-g175d0de361-dirty BIOS), Memory: 3584MB, Disk: 230GB M.2 (P42) 3TE2 + 2 x 120GB Crucial_CT120M50 + 2 x 500GB Samsung SSD 860

OS: Debian 10, Kernel: 5.4.29-traverse-lts-5-4+21 (aarch64), Compiler: GCC 8.3.0, File-System: ext4

Compiler Notes: --build=aarch64-linux-gnu --disable-libphobos --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: NONE / relatime,rw / raid1 sdd1[1] sdc1[0]
Python Notes: Python 2.7.16 + Python 3.7.3
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Not affected + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Not affected + tsx_async_abort: Not affected

	JMB585_2X_860_EVO_2	MRVL9215_2X_860_EVO
SQLite - T.S.I (sec)	83.040	335.761
Normalized	100%	24.73%

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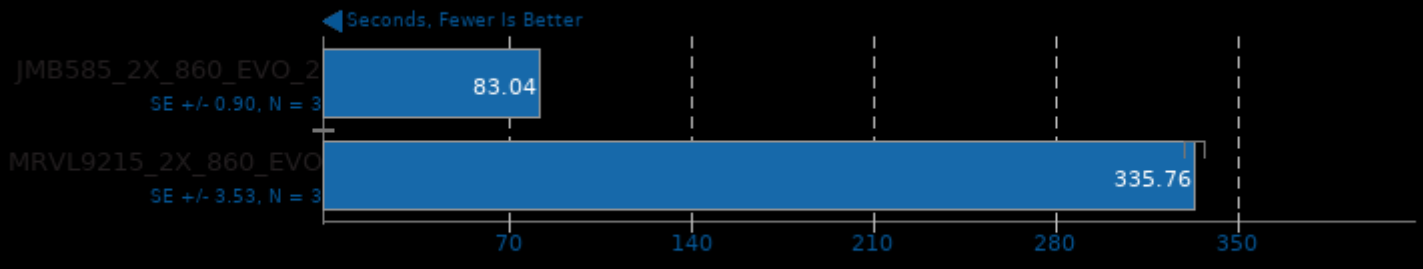
Standard Deviation	1.9%	1.8%
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 2MB (MB/s)	**1086**	**404**
Normalized	100%	37.2%
Standard Deviation	0.1%	0.3%
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 2MB (IOPS)	**539**	**198**
Normalized	100%	36.73%
Standard Deviation	0.2%	
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 4KB (MB/s)	**178**	**134**
Normalized	100%	75.28%
Standard Deviation	0.3%	9.5%
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 4KB (IOPS)	**45500**	**34093**
Normalized	100%	74.93%
Standard Deviation	0.4%	9.5%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 2MB (MB/s)	**360**	**200**
Normalized	100%	55.56%
Standard Deviation	5.4%	
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 2MB (IOPS)	**177**	**97**
Normalized	100%	54.8%
Standard Deviation	5.5%	0.6%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 4KB (MB/s)	**115**	**86.5**
Normalized	100%	75.22%
Standard Deviation		8.2%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 4KB (IOPS)	**29433**	**22133**
Normalized	100%	75.2%
Standard Deviation	0.2%	8.2%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 2MB (MB/s)	**446**	**402**
Normalized	100%	90.13%
Standard Deviation	0.3%	0.3%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 2MB (IOPS)	**220**	**197**
Normalized	100%	89.55%
Standard Deviation	0.3%	0.3%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (MB/s)	**172**	**164**
Normalized	100%	95.35%
Standard Deviation		1.5%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (IOPS)	**43667**	**41967**
Normalized	100%	96.11%
Standard Deviation	1.3%	1.4%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 2MB (MB/s)	**374**	**174**
Normalized	100%	46.52%
Standard Deviation	0.4%	12.5%

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Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 2MB (IOPS)	**183**	**84**
Normalized	100%	45.9%
Standard Deviation	0.5%	13.1%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (MB/s)	**116**	**105.7**
Normalized	100%	91.12%
Standard Deviation		4.2%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (IOPS)	**29600**	**26933**
Normalized	100%	90.99%
Standard Deviation		4.5%
FS-Mark - 1.F.1.S (Files/s)	**75.8**	**63.0**
Normalized	100%	83.11%
Standard Deviation	2.8%	2.8%
FS-Mark - 5.F.1.S.4.T (Files/s)	**173.3**	**107.2**
Normalized	100%	61.86%
Standard Deviation	12.9%	10.4%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	**61.7**	**56.5**
Normalized	100%	91.57%
Standard Deviation	0.6%	2.9%
FS-Mark - 1.F.1.S.N.S.F (Files/s)	**284.4**	**245.1**
Normalized	100%	86.18%
Standard Deviation	15.3%	15.9%
Dbench - 12 Clients (MB/s)	**296.817**	**295.054**
Normalized	100%	99.41%
Standard Deviation	1.8%	1.6%
Dbench - 1 Clients (MB/s)	**57.9498**	**57.6454**
Normalized	100%	99.47%
Standard Deviation	0.7%	0.2%
Compile Bench - Compile (MB/s)	**192.36**	**160.35**
Normalized	100%	83.36%
Standard Deviation	9.1%	10.8%
Compile Bench - Initial Create (MB/s)	**77.25**	**80.32**
Normalized	96.18%	100%
Standard Deviation	4.4%	1.2%
Compile Bench - Read Compiled Tree (MB/s)	**250.57**	**240.58**
Normalized	100%	96.01%
Standard Deviation	1%	0.7%
PostMark - D.T.P (TPS)	**894**	**914**
Normalized	97.81%	100%
Standard Deviation	2.3%	3%

SQLite 3.30.1

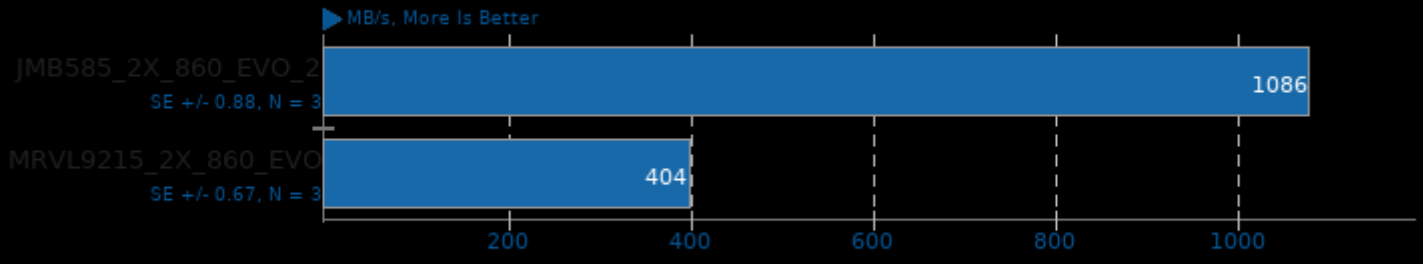
Timed SQLite Insertions



1. (CC) gcc options: -O2 -lm -ldl -lpthread

Flexible IO Tester 3.18

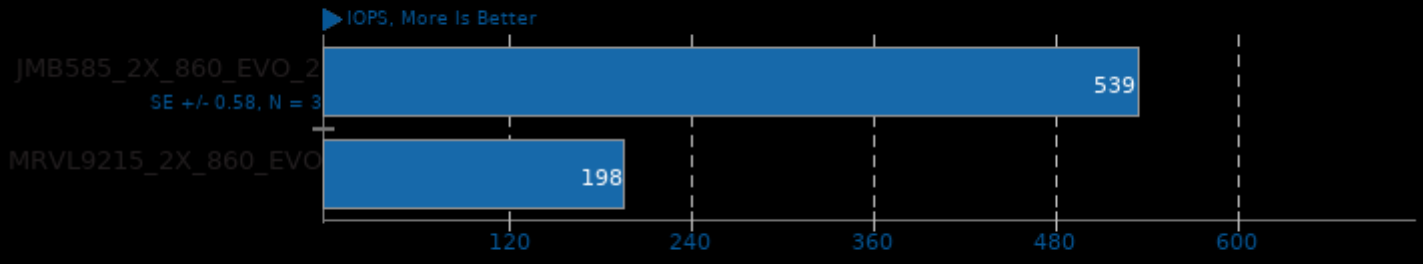
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

Flexible IO Tester 3.18

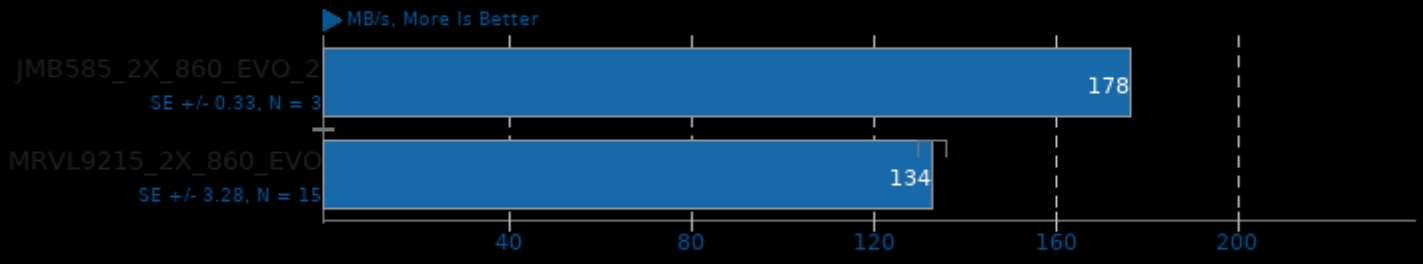
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

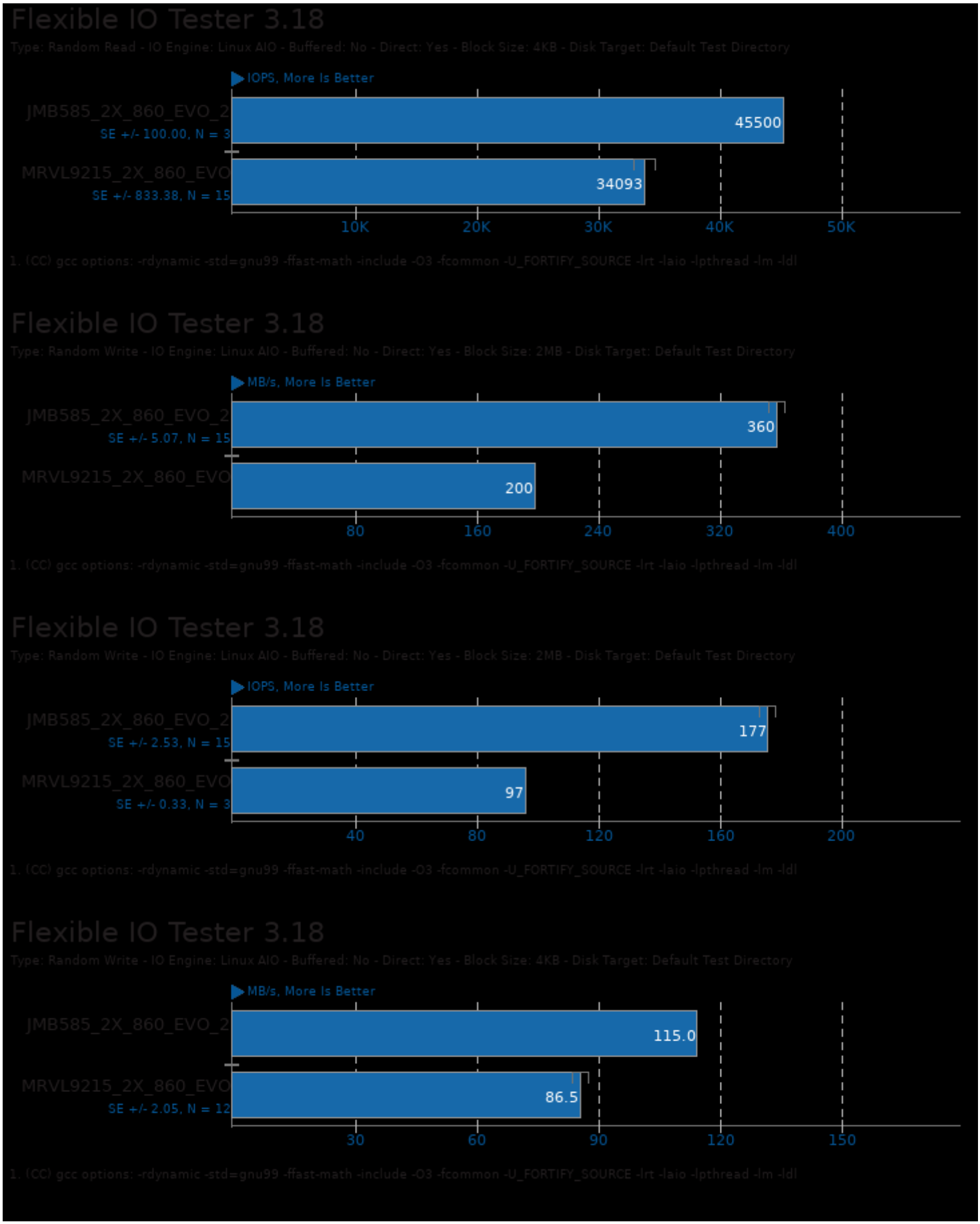
Flexible IO Tester 3.18

Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

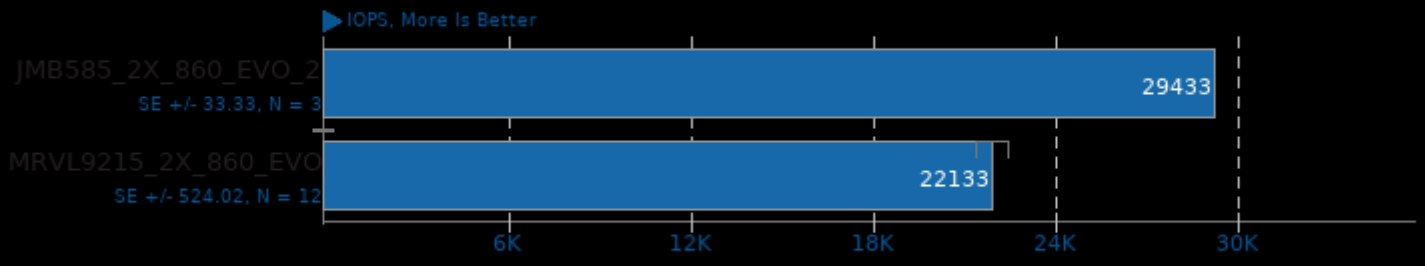
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Flexible IO Tester 3.18

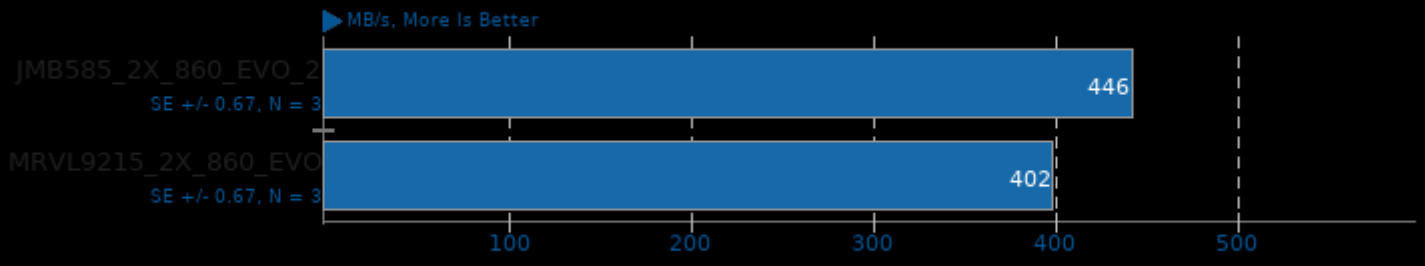
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

Flexible IO Tester 3.18

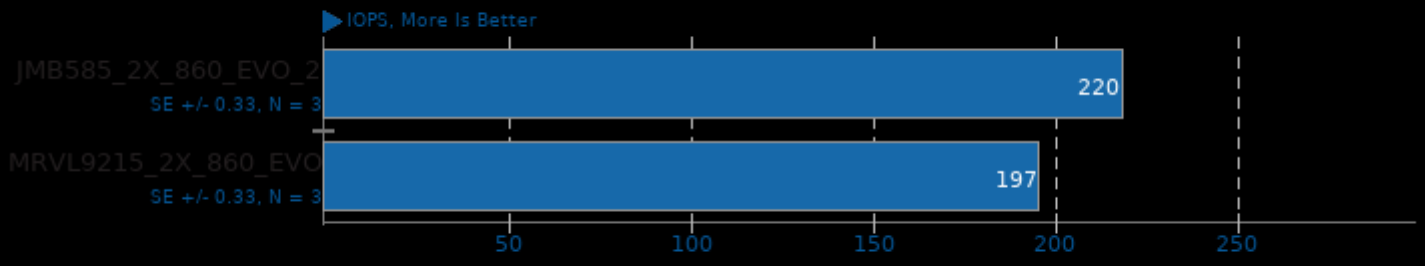
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

Flexible IO Tester 3.18

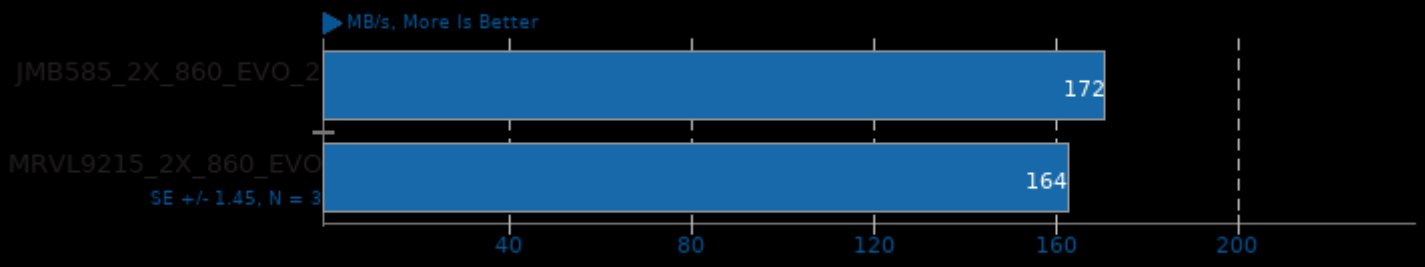
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory



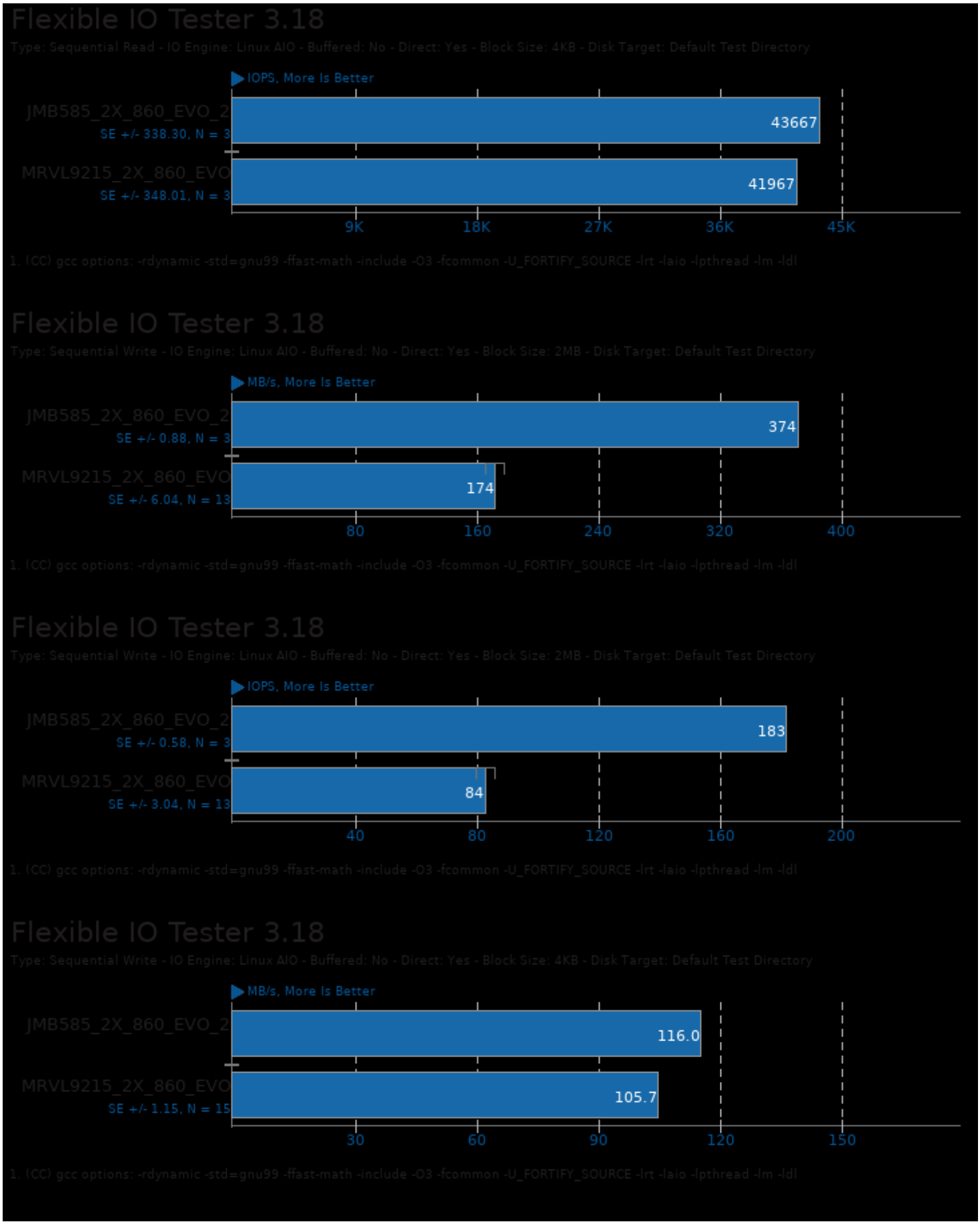
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

Flexible IO Tester 3.18

Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory

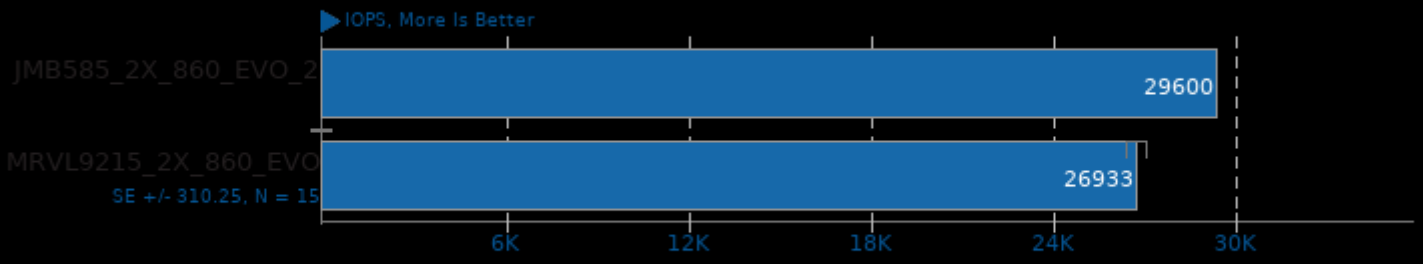


1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
JMB585_2X_860_EVO_2
SE +/- 338.30, N = 3
43667
MRVL9215_2X_860_EVO
SE +/- 348.01, N = 3
41967
9K
18K
27K
36K
45K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
JMB585_2X_860_EVO_2
SE +/- 0.88, N = 3
374
MRVL9215_2X_860_EVO
SE +/- 6.04, N = 13
174
80
160
240
320
400
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
JMB585_2X_860_EVO_2
SE +/- 0.58, N = 3
183
MRVL9215_2X_860_EVO
SE +/- 3.04, N = 13
84
40
80
120
160
200
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl
Flexible IO Tester 3.18
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
JMB585_2X_860_EVO_2
116.0
MRVL9215_2X_860_EVO
SE +/- 1.15, N = 15
105.7
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

Flexible IO Tester 3.18

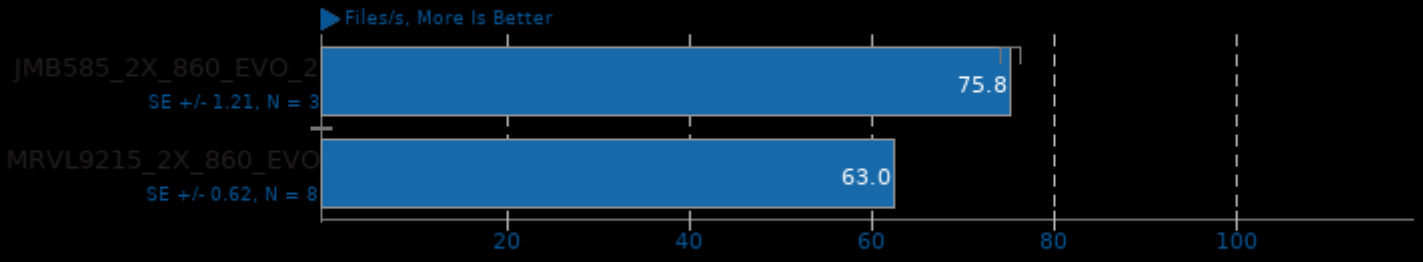
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -lrt -laio -lpthread -lm -ldl

FS-Mark 3.3

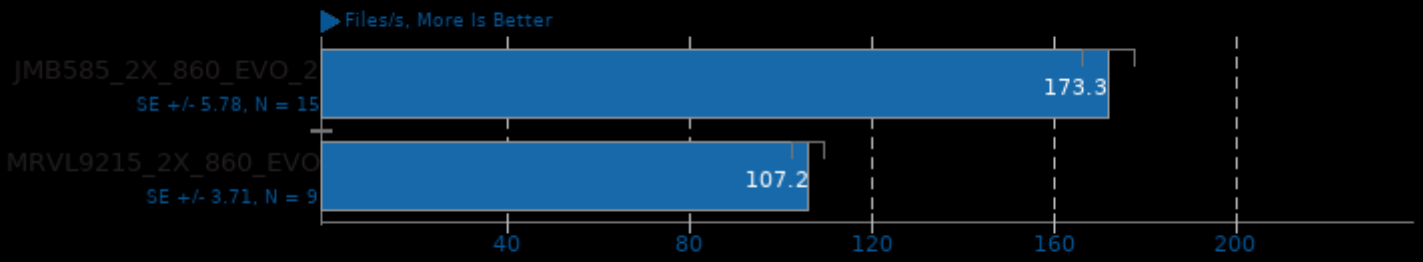
Test: 1000 Files, 1MB Size



1. (CC) gcc options: -static

FS-Mark 3.3

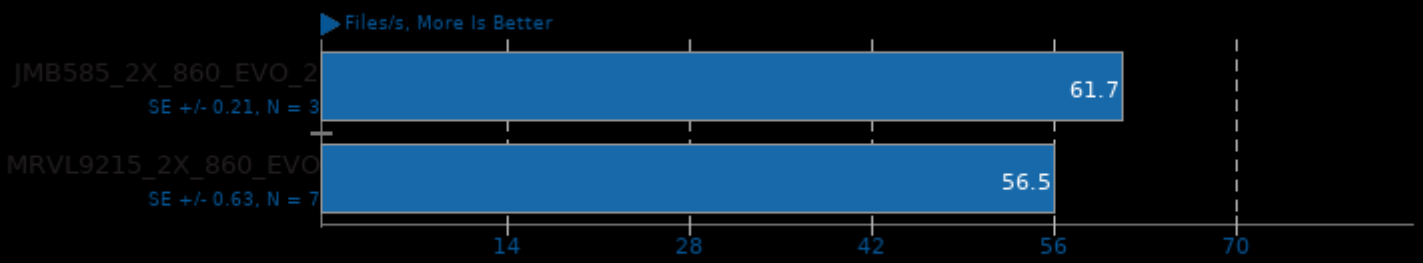
Test: 5000 Files, 1MB Size, 4 Threads



1. (CC) gcc options: -static

FS-Mark 3.3

Test: 4000 Files, 32 Sub Dirs, 1MB Size

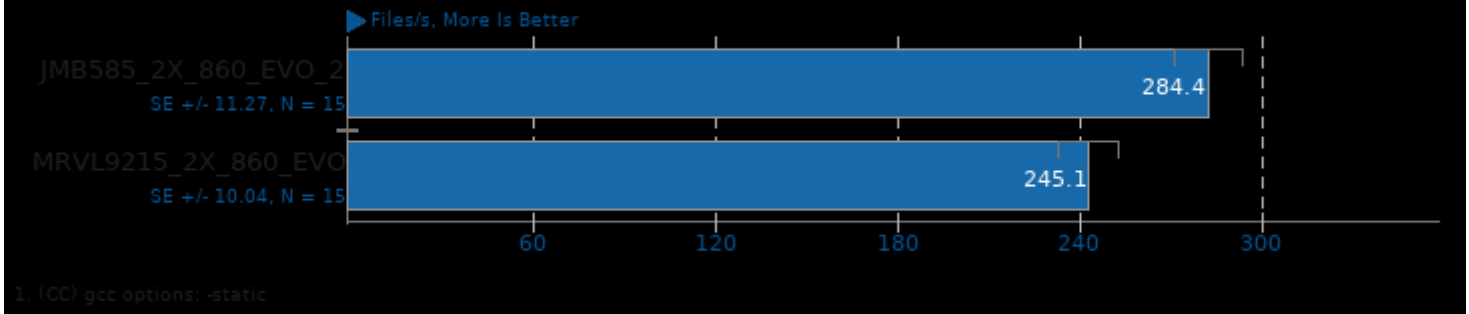


1. (CC) gcc options: -static

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FS-Mark 3.3

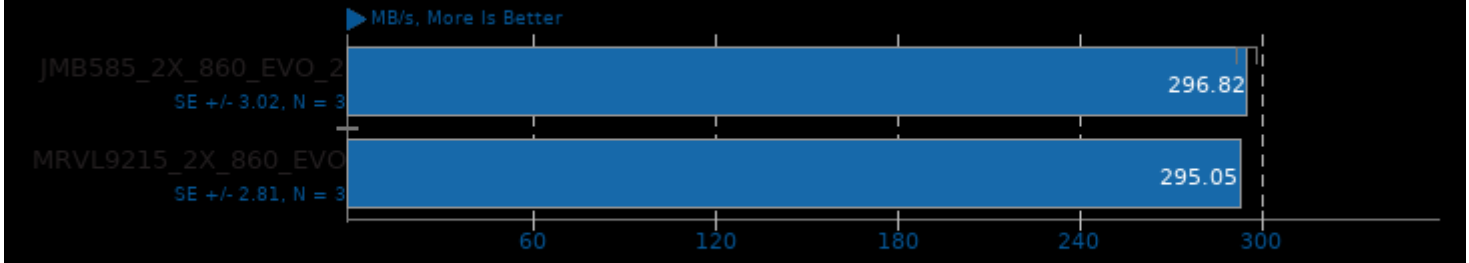
Test: 1000 Files, 1MB Size, No Sync/FSync



1. (CC) gcc options: -static

Dbench 4.0

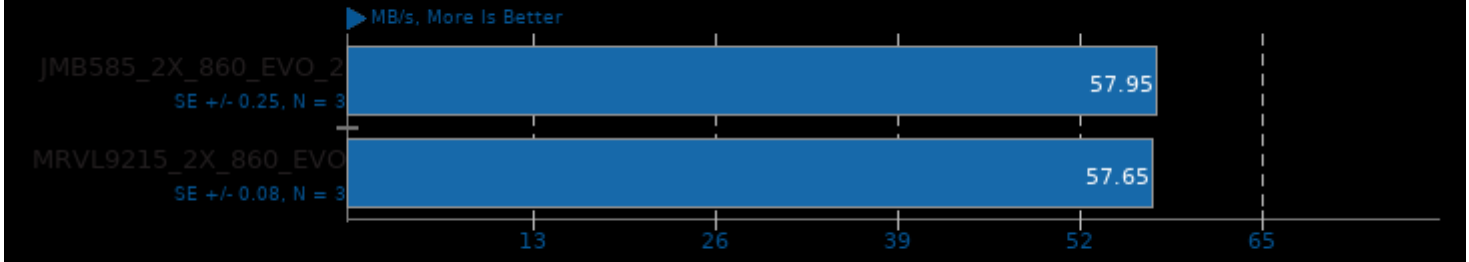
12 Clients



1. (CC) gcc options: -lpopt -O2

Dbench 4.0

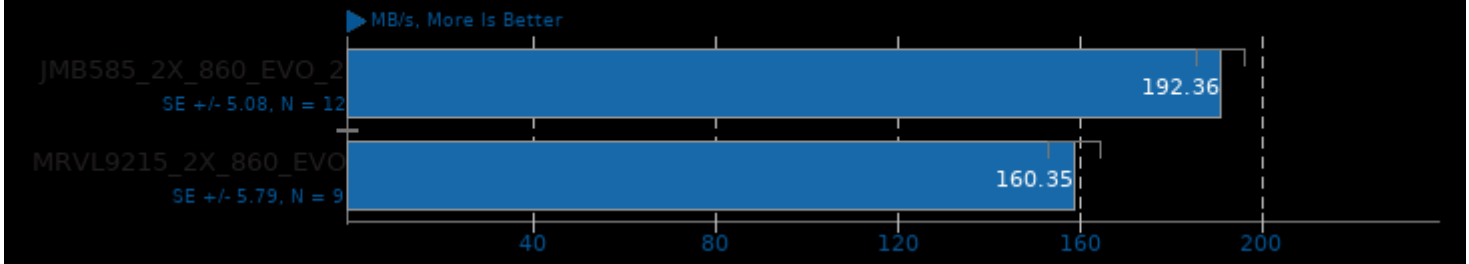
1 Clients



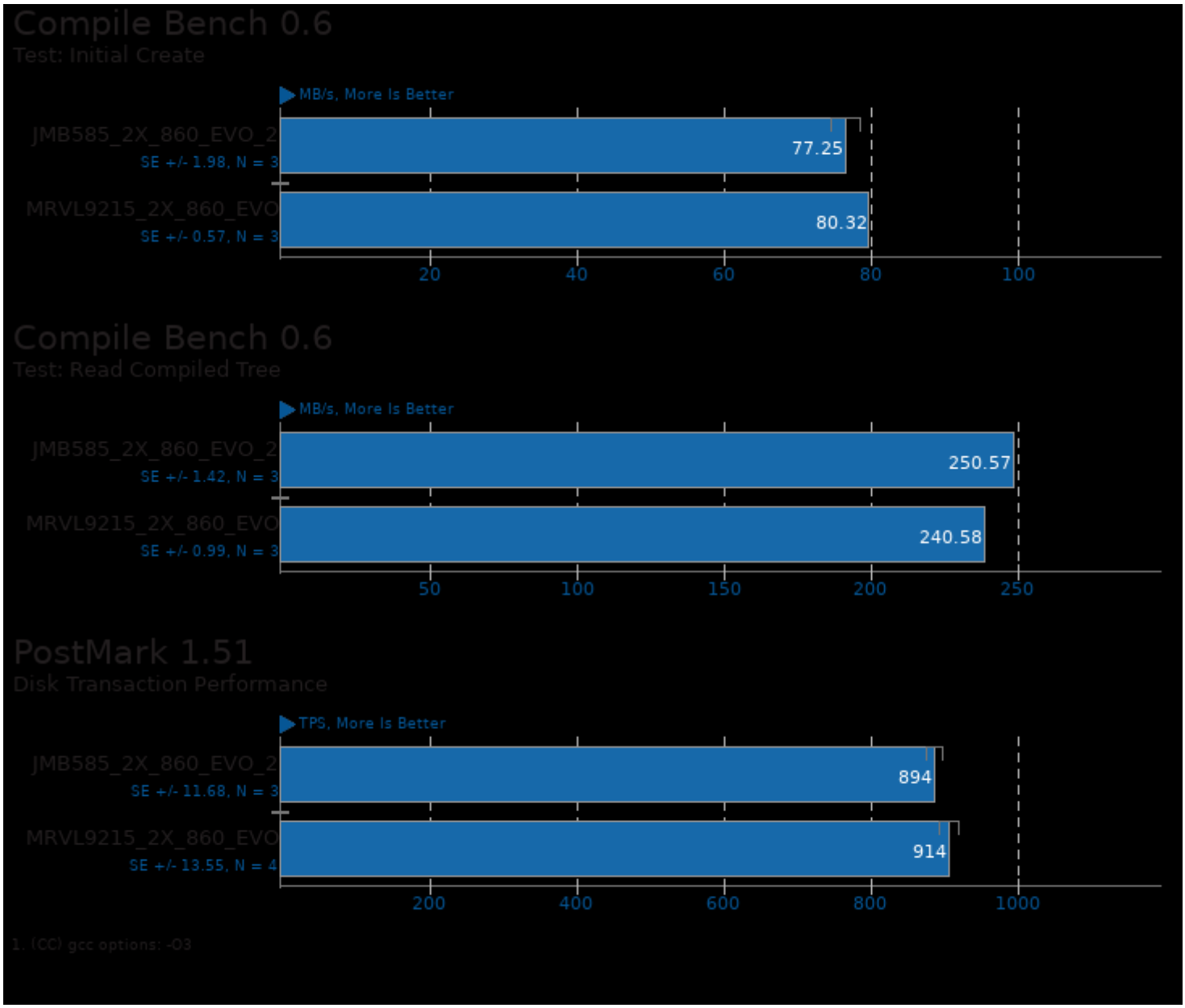
1. (CC) gcc options: -lpopt -O2

Compile Bench 0.6

Test: Compile



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



Geometric mean based upon tests: pts/sqlite, pts/fs-mark, pts/compilebench, pts/dbench, pts/postmark and pts/fio

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 06:06.