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lowmemory

Intel Core i7-6500U testing with a Purism Librem 15 v3 v3.0 (4.6-a86d1b-Purism-4 BIOS) and Intel Skylake GT2 [HD 520] on Ubuntu 19.10 via the Phoronix Test Suite.

Automated Executive Summary

lowmemoryzfs had the most wins, coming in first place for 63% of the tests.

Based on the geometric mean of all complete results, the fastest (lowmemoryext4) was 1.039x the speed of the slowest (lowmemoryzfs).

Test Systems:

lowmemoryzfs

Processor: Intel Core i7-6500U @ 3.10GHz (2 Cores / 4 Threads), Motherboard: Purism Librem 15 v3 v3.0 (4.6-a86d1b-Purism-4 BIOS), Chipset: Intel Xeon E3-1200 v5/E3-1500, Memory: 8192MB, Disk: 500GB Samsung SSD 850, Graphics: Intel HD 520 3GB (1050MHz), Audio: Realtek ALC269VC, Network: Qualcomm Atheros AR9462

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OS: Ubuntu 19.10, Kernel: 5.3.0-19-generic (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: modesetting 1.20.5, OpenGL: 4.5 Mesa 19.2.1, Compiler: GCC 9.2.1 20191008, File-System: zfs, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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-offload-targets=nvptx-none,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
Disk Scheduler Notes: MQ-DEADLINE
Python Notes: Python 2.7.17rc1 + Python 3.7.5rc1
Security Notes: 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

lowmemoryext4

Processor: Intel Core i7-6500U @ 3.10GHz (2 Cores / 4 Threads), Motherboard: Purism Librem 15 v3 v3.0 (4.6-a86d1b-Purism-4 BIOS), Chipset: Intel Xeon E3-1200 v5/E3-1500, Memory: 1 x 16384 MB 2133MT/s, Disk: 500GB Samsung SSD 850, Graphics: Intel Skylake GT2 [HD 520] (1050MHz), Audio: Realtek ALC269VC, Network: Qualcomm Atheros AR9462

OS: Ubuntu 19.10, Kernel: 5.3.0-19-generic (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server, Compiler: GCC 9.2.1 20191008, File-System: ext4, Screen Resolution: 1920x1080

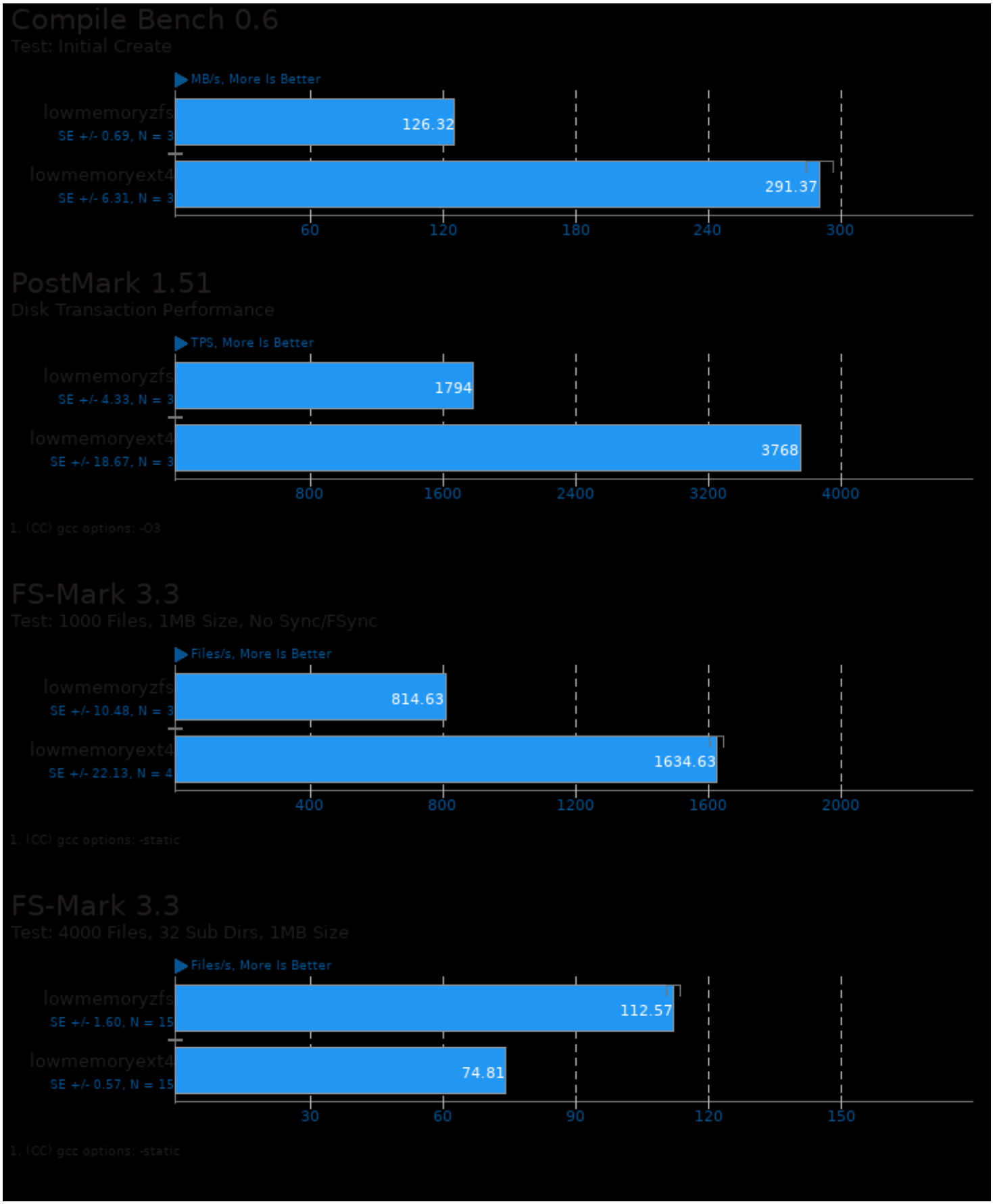
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,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
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.17rc1 + Python 3.7.5rc1
Security Notes: 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

	lowmemoryzfs	lowmemoryext4
Compile Bench - Initial Create (MB/s)	126.32	291.37
Normalized	43.35%	100%
Standard Deviation	0.9%	3.7%
PostMark - D.T.P (TPS)	1794	3768
Normalized	47.61%	100%
Standard Deviation	0.4%	0.9%
FS-Mark - 1.F.1.S.N.S.F (Files/s)	814.63	1635
Normalized	49.84%	100%
Standard Deviation	2.2%	2.7%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	112.57	74.81
Normalized	100%	66.46%
Standard Deviation	5.5%	3%
FS-Mark - 1.F.1.S (Files/s)	148.70	113.00
Normalized	100%	75.99%
Standard Deviation	3%	1.6%
Compile Bench - Read Compiled Tree (MB/s)	808.88	640.83
Normalized	100%	79.22%

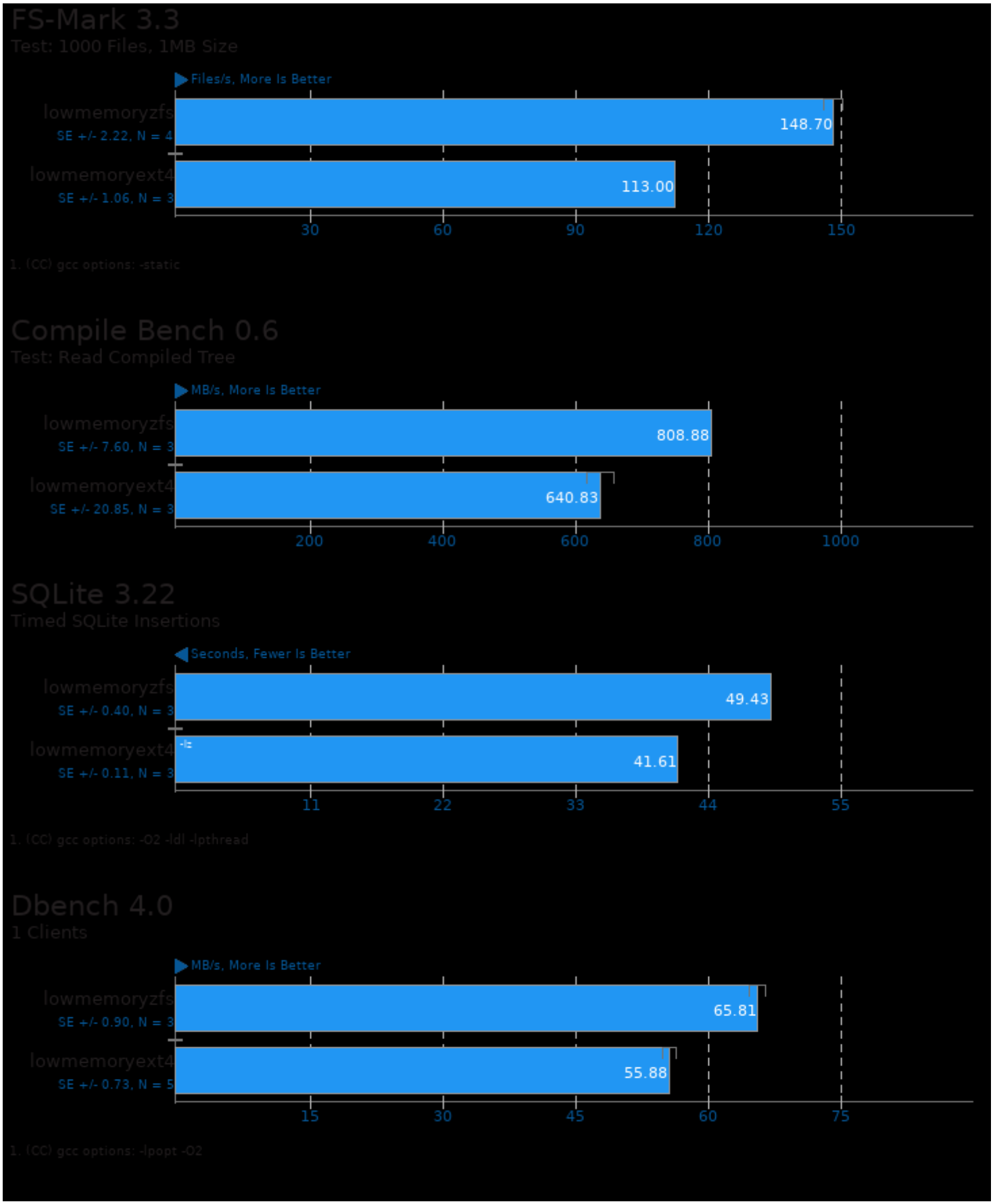
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Standard Deviation	1.6%	5.6%
SQLite - T.S.I (sec)	**49.43**	**41.61**
Normalized	84.18%	100%
Standard Deviation	1.4%	0.5%
Dbench - 1 Clients (MB/s)	**65.81**	**55.88**
Normalized	100%	84.91%
Standard Deviation	2.4%	2.9%
FS-Mark - 5.F.1.S.4.T (Files/s)	**164.16**	**162.03**
Normalized	100%	98.7%
Standard Deviation	2.9%	3%
Compile Bench - Compile (MB/s)	**971.08**	**388.79**
Normalized	100%	40.04%
Standard Deviation	0.5%	14.2%
Dbench - 12 Clients (MB/s)	**318.93**	**314.94**
Normalized	100%	98.75%
Standard Deviation	8.9%	2.9%

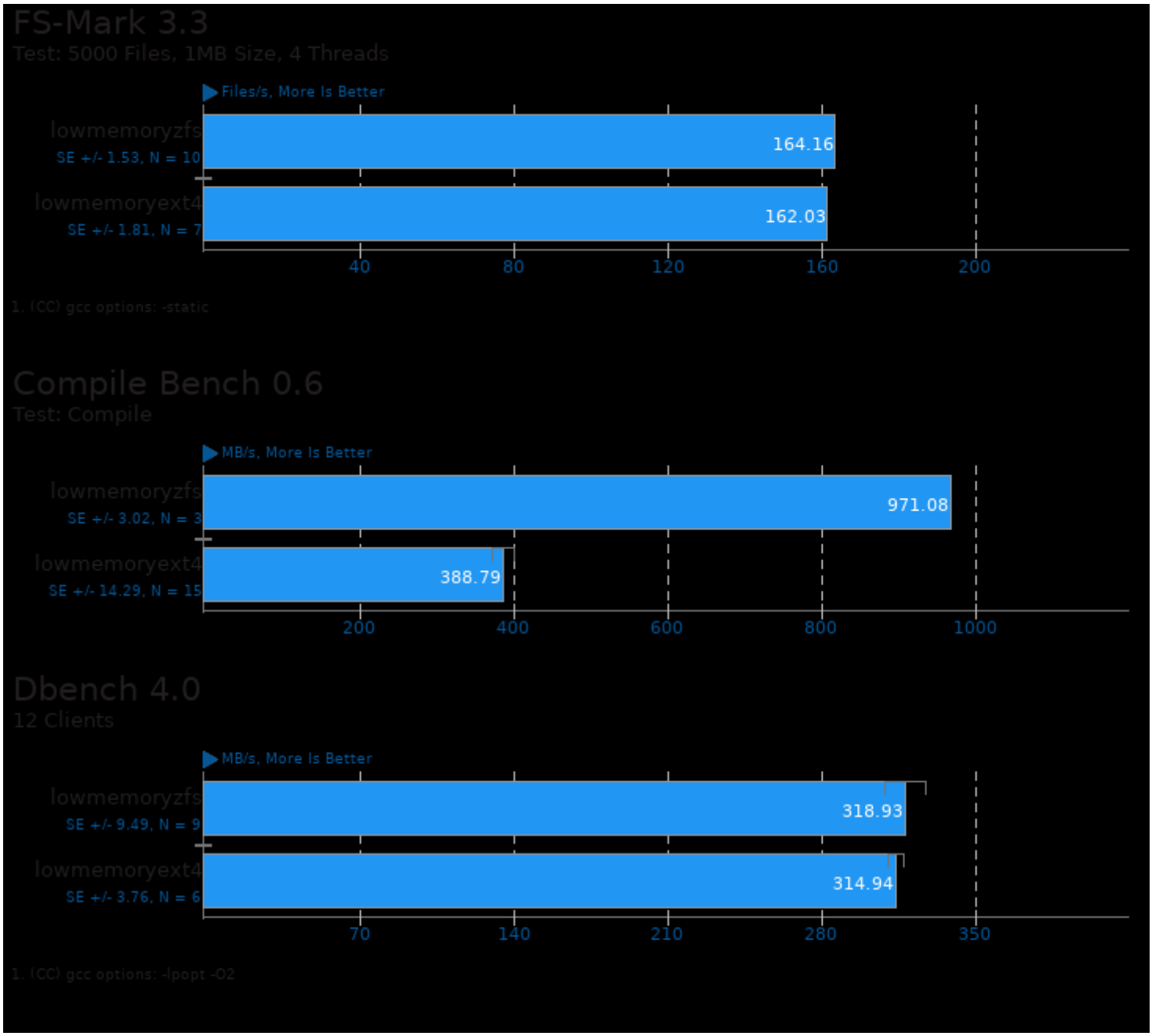
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Compile Bench 0.6
Test: Initial Create
MB/s, More Is Better
lowmemoryzfs
SE +/- 0.69, N = 3
126.32
lowmemoryext4
SE +/- 6.31, N = 3
291.37
60
120
180
240
300
PostMark 1.51
Disk Transaction Performance
TPS, More Is Better
lowmemoryzfs
SE +/- 4.33, N = 3
1794
lowmemoryext4
SE +/- 18.67, N = 3
3768
800
1600
2400
3200
4000
1. (CC) gcc options: -O3
FS-Mark 3.3
Test: 1000 Files, 1MB Size, No Sync/FSync
Files/s, More Is Better
lowmemoryzfs
SE +/- 10.48, N = 3
814.63
lowmemoryext4
SE +/- 22.13, N = 4
1634.63
400
800
1200
1600
2000
1. (CC) gcc options: -static
FS-Mark 3.3
Test: 4000 Files, 32 Sub Dirs, 1MB Size
Files/s, More Is Better
lowmemoryzfs
SE +/- 1.60, N = 15
112.57
lowmemoryext4
SE +/- 0.57, N = 15
74.81
30
60
90
120
150
1. (CC) gcc options: -static

lowmemory

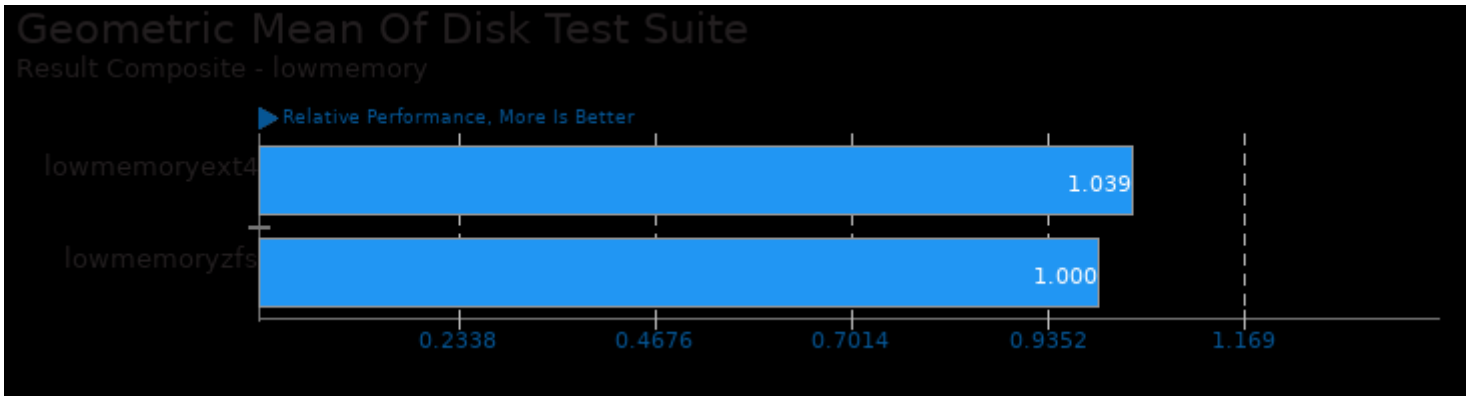

FS-Mark 3.3
Test: 1000 Files, 1MB Size
Files/s, More Is Better
lowmemoryzfs
SE +/- 2.22, N = 4
148.70
lowmemoryext4
SE +/- 1.06, N = 3
113.00
30
60
90
120
150
1. (CC) gcc options: -static
Compile Bench 0.6
Test: Read Compiled Tree
MB/s, More Is Better
lowmemoryzfs
SE +/- 7.60, N = 3
808.88
lowmemoryext4
SE +/- 20.85, N = 3
640.83
200
400
600
800
1000
SQLite 3.22
Timed SQLite Insertions
Seconds, Fewer Is Better
lowmemoryzfs
SE +/- 0.40, N = 3
49.43
lowmemoryext4
SE +/- 0.11, N = 3
41.61
11
22
33
44
55
1. (CC) gcc options: -O2 -ldl -lpthread
Dbench 4.0
1 Clients
MB/s, More Is Better
lowmemoryzfs
SE +/- 0.90, N = 3
65.81
lowmemoryext4
SE +/- 0.73, N = 5
55.88
15
30
45
60
75
1. (CC) gcc options: -lpopt -O2

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FS-Mark 3.3
Test: 5000 Files, 1MB Size, 4 Threads
Files/s, More Is Better
lowmemoryzfs
SE +/- 1.53, N = 10
164.16
lowmemoryext4
SE +/- 1.81, N = 7
162.03
40
80
120
160
200
1. (CC) gcc options: -static
Compile Bench 0.6
Test: Compile
MB/s, More Is Better
lowmemoryzfs
SE +/- 3.02, N = 3
971.08
lowmemoryext4
SE +/- 14.29, N = 15
388.79
200
400
600
800
1000
Dbench 4.0
12 Clients
MB/s, More Is Better
lowmemoryzfs
SE +/- 9.49, N = 9
318.93
lowmemoryext4
SE +/- 3.76, N = 6
314.94
70
140
210
280
350
1. (CC) gcc options: -lpopt -O2

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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 and pts/postmark

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 06:40.