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# CC23Assignment2

Xen HVM domU 4.11.amazon testing on Ubuntu 22.04 via the Phoronix Test Suite.

**Automated Executive Summary**

*t2micro had the most wins, coming in first place for 80% of the tests.*

*Based on the geometric mean of all complete results, the fastest (c1medium) was 1.005x the speed of the slowest (t2micro).*

## Test Systems:

### t2micro

Processor: Intel Xeon E5-2676 v3 (1 Core), Motherboard: Xen HVM domU (4.11.amazon BIOS), Chipset: Intel 440FX 82441FX PMC, Memory: 1 x GB RAM, Disk: 8GB, Graphics: Cirrus Logic GD 5446

OS: Ubuntu 22.04, Kernel: 5.15.0-1028-aws (x86_64), Compiler: GCC 11.3.0, File-System: ext4, System Layer: Xen

HVM domU 4.11.amazon

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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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: CPU Microcode: 0x49
Security Notes: itlb_multihit: KVM: Mitigation of VMX unsupported + l1tf: Mitigation of PTE Inversion + mds: Vulnerable: Clear buffers attempted no microcode; SMT Host state unknown + meltdown: Mitigation of PTI + mmio_stale_data: Vulnerable: Clear buffers attempted no microcode; SMT Host state unknown + retbleed: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

## c1medium

Processor: Intel Xeon E5-2650 0 (2 Cores), Motherboard: Xen HVM domU (4.11.amazon BIOS), Chipset: Intel 440FX 82441FX PMC, Memory: 1 x 1740 MB RAM, Disk: 8GB, Graphics: Cirrus Logic GD 5446

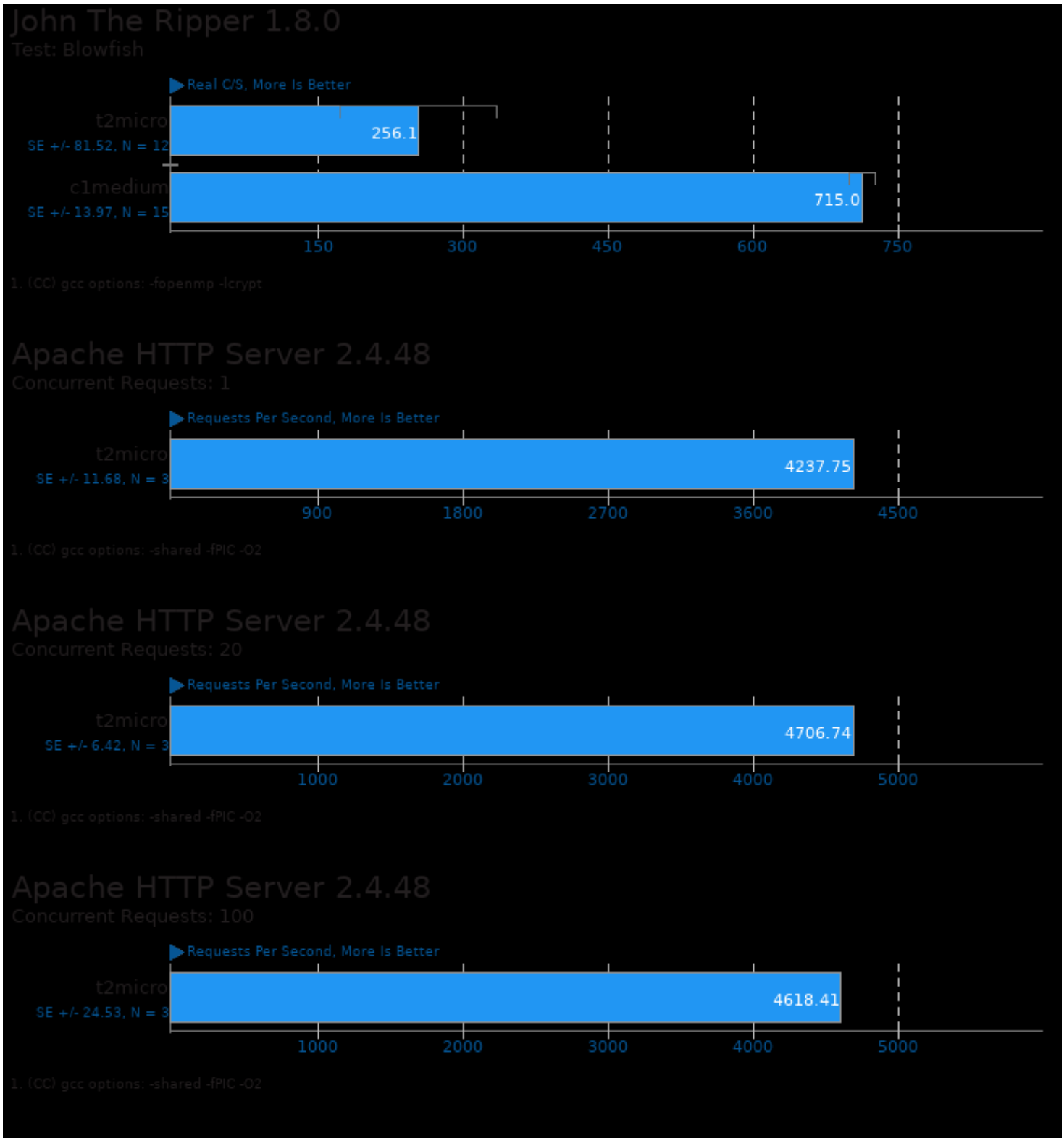
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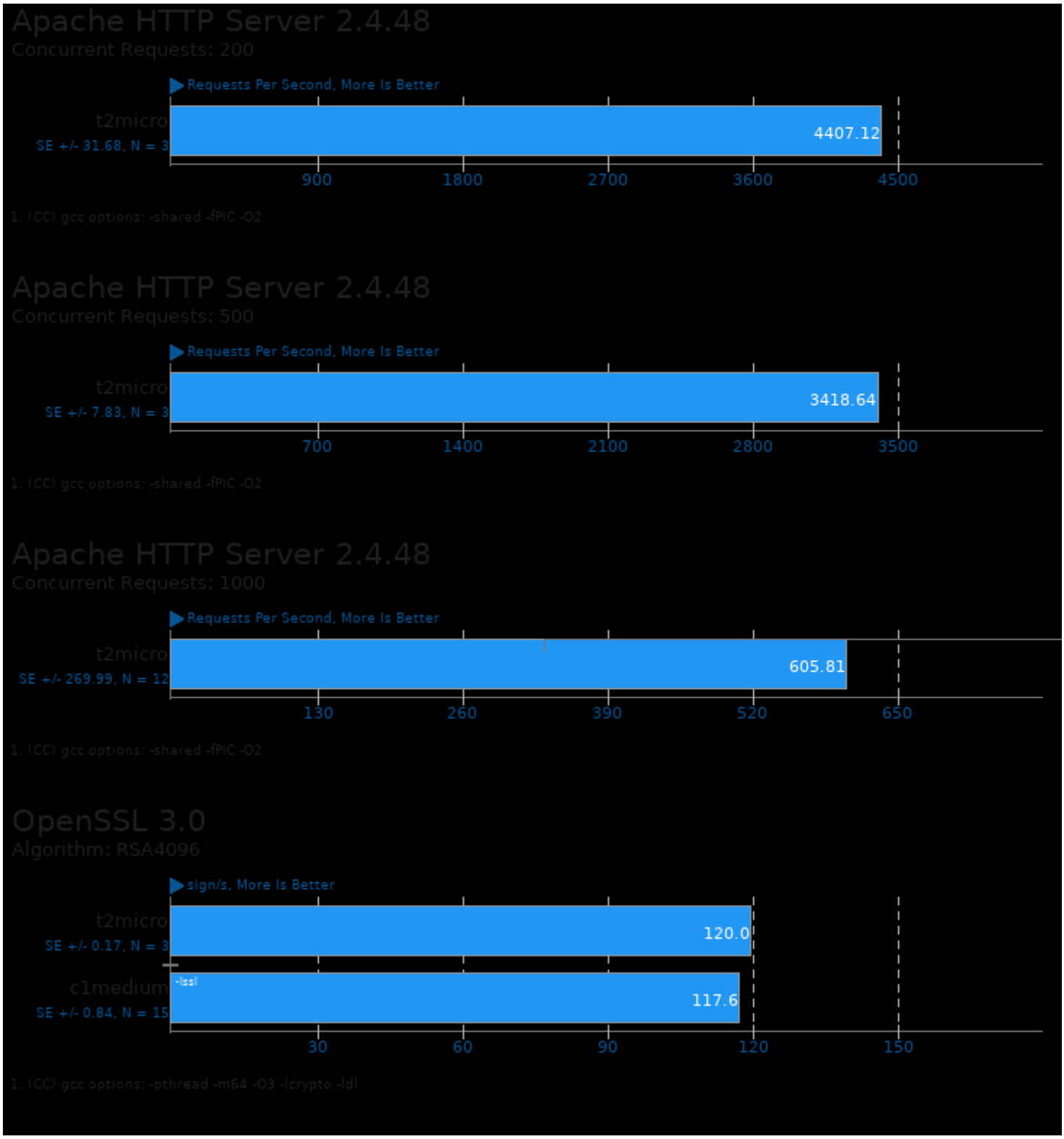
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Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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: CPU Microcode: 0x621
Security Notes: itlb_multihit: KVM: Mitigation of VMX unsupported + l1tf: Mitigation of PTE Inversion + mds: Vulnerable: Clear buffers attempted no microcode; SMT Host state unknown + meltdown: Mitigation of PTI + mmio_stale_data: Unknown: No mitigations + retbleed: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

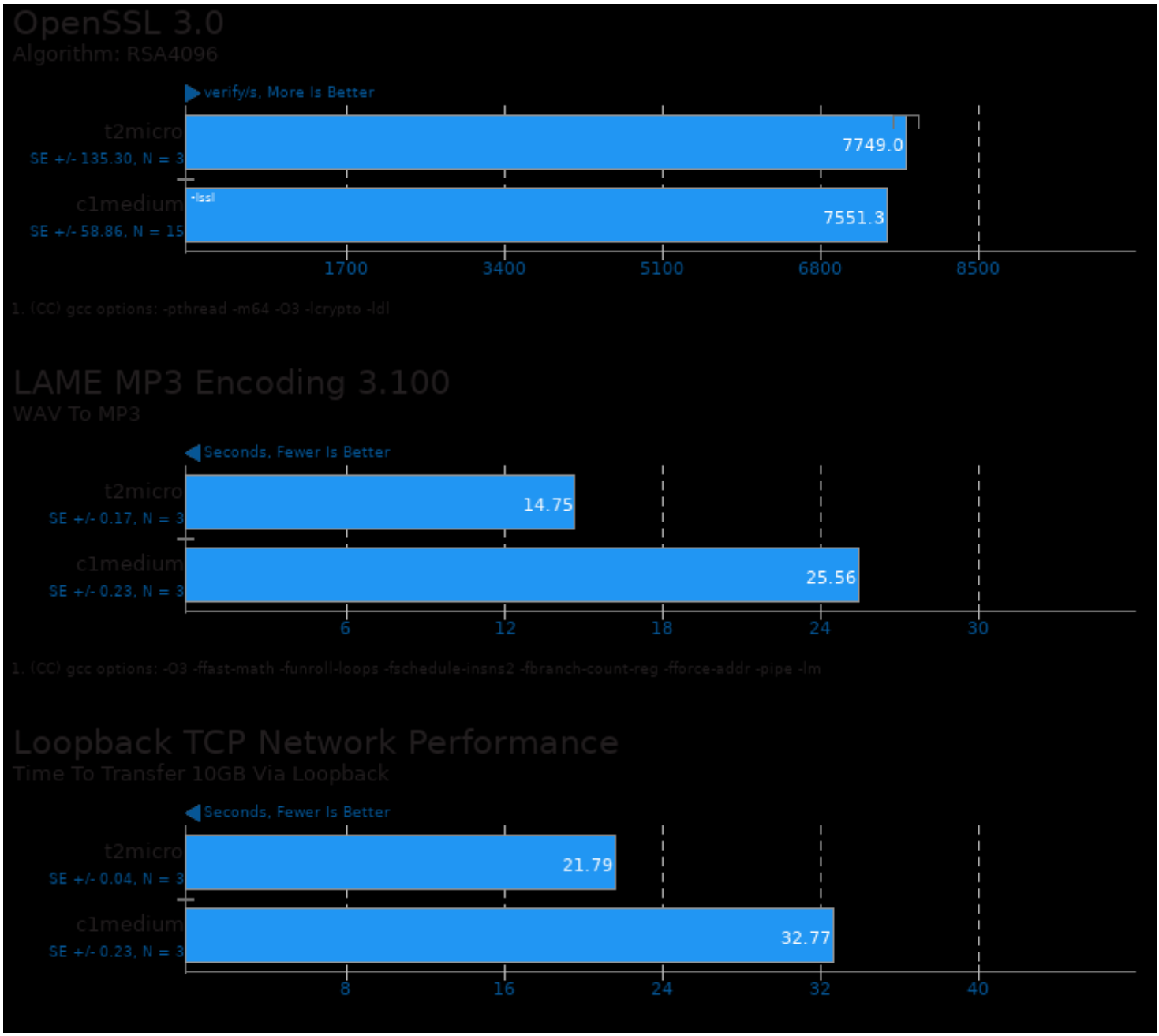
| | t2micro | c1medium |
|---|---|---|
| **John The Ripper - Blowfish (Real C/S)** | **256.1** | **715** |
| **Normalized** | 35.82% | 100% |
| **Standard Deviation** | 110.3% | 7.6% |
| **Apache HTTP Server - 1 (Reqs/sec)** | 4238 | |
| **Standard Deviation** | 0.5% | |
| **Apache HTTP Server - 20 (Reqs/sec)** | 4707 | |
| **Standard Deviation** | 0.2% | |
| **Apache HTTP Server - 100 (Reqs/sec)** | 4618 | |
| **Standard Deviation** | 0.9% | |
| **Apache HTTP Server - 200 (Reqs/sec)** | 4407 | |
| **Standard Deviation** | 1.2% | |
| **Apache HTTP Server - 500 (Reqs/sec)** | 3419 | |
| **Standard Deviation** | 0.4% | |
| **Apache HTTP Server - 1000 (Reqs/sec)** | 605.81 | |
| **Standard Deviation** | 154.4% | |
| **OpenSSL - RSA4096 (sign/s)** | **120.0** | **117.6** |
| **Normalized** | 100% | 98% |
| **Standard Deviation** | 0.2% | 2.8% |

# CC23Assignment2

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|---|---|---|
| **OpenSSL - RSA4096 (verify/s)** | **7749** | **7551** |
| **Normalized** | 100% | 97.45% |
| **Standard Deviation** | 3% | 3% |
| **LAME MP3 Encoding - WAV To MP3 (sec)** | **14.750** | **25.564** |
| **Normalized** | 100% | 57.7% |
| **Standard Deviation** | 2% | 1.6% |
| **Loopback TCP Network Performance - T.T.T.1.V.L** | **21.788** | **32.773** |
| **Normalized** | 100% | 66.48% |
| **Standard Deviation** | 0.3% | 1.2% |


John The Ripper 1.8.0
Test: Blowfish
Real C/S, More Is Better
t2micro
SE +/- 81.52, N = 12
256.1
c1medium
SE +/- 13.97, N = 15
715.0
150
300
450
600
750
1. (CC) gcc options: -fopenmp -lcrypt
Apache HTTP Server 2.4.48
Concurrent Requests: 1
Requests Per Second, More Is Better
t2micro
SE +/- 11.68, N = 3
4237.75
900
1800
2700
3600
4500
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 20
Requests Per Second, More Is Better
t2micro
SE +/- 6.42, N = 3
4706.74
1000
2000
3000
4000
5000
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 100
Requests Per Second, More Is Better
t2micro
SE +/- 24.53, N = 3
4618.41
1000
2000
3000
4000
5000
1. (CC) gcc options: -shared -fPIC -O2

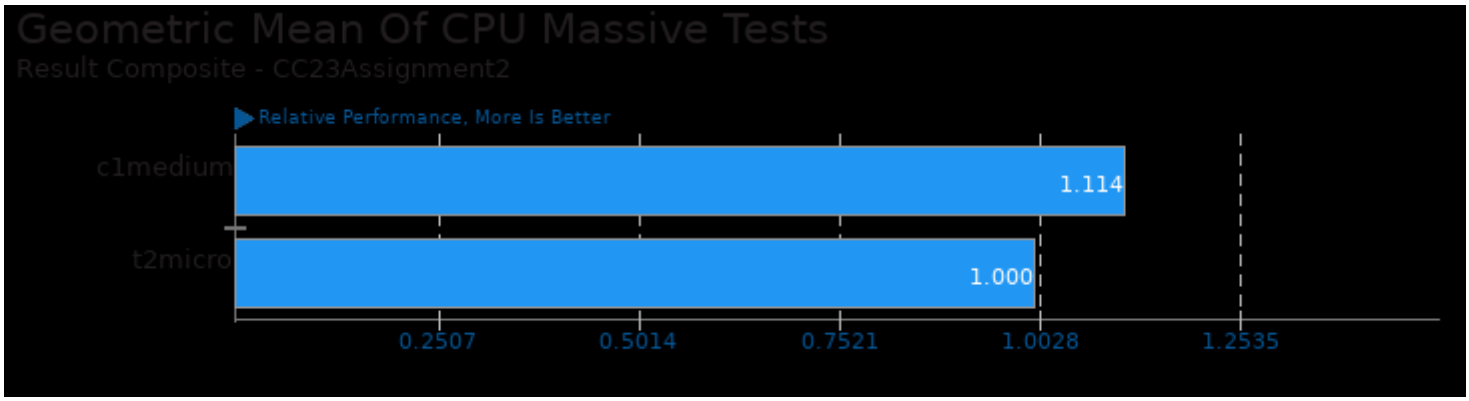

Apache HTTP Server 2.4.48
Concurrent Requests: 200
Requests Per Second, More Is Better
t2micro
SE +/- 31.68, N = 3
4407.12
900
1800
2700
3600
4500
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 500
Requests Per Second, More Is Better
t2micro
SE +/- 7.83, N = 3
3418.64
700
1400
2100
2800
3500
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 1000
Requests Per Second, More Is Better
t2micro
SE +/- 269.99, N = 12
605.81
130
260
390
520
650
1. (CC) gcc options: -shared -fPIC -O2
OpenSSL 3.0
Algorithm: RSA4096
sign/s, More Is Better
t2micro
SE +/- 0.17, N = 3
120.0
c1medium
-lssl
SE +/- 0.84, N = 15
117.6
30
60
90
120
150
1. (CC) gcc options: -pthread -m64 -O3 -lcrypto -ldl


OpenSSL 3.0
Algorithm: RSA4096
verify/s, More Is Better
t2micro
SE +/- 135.30, N = 3
7749.0
c1medium
SE +/- 58.86, N = 15
-lssl
7551.3
1700
3400
5100
6800
8500
1. (CC) gcc options: -pthread -m64 -O3 -lcrypto -ldl
LAME MP3 Encoding 3.100
WAV To MP3
Seconds, Fewer Is Better
t2micro
SE +/- 0.17, N = 3
14.75
c1medium
SE +/- 0.23, N = 3
25.56
6
12
18
24
30
1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lm
Loopback TCP Network Performance
Time To Transfer 10GB Via Loopback
Seconds, Fewer Is Better
t2micro
SE +/- 0.04, N = 3
21.79
c1medium
SE +/- 0.23, N = 3
32.77
8
16
24
32
40

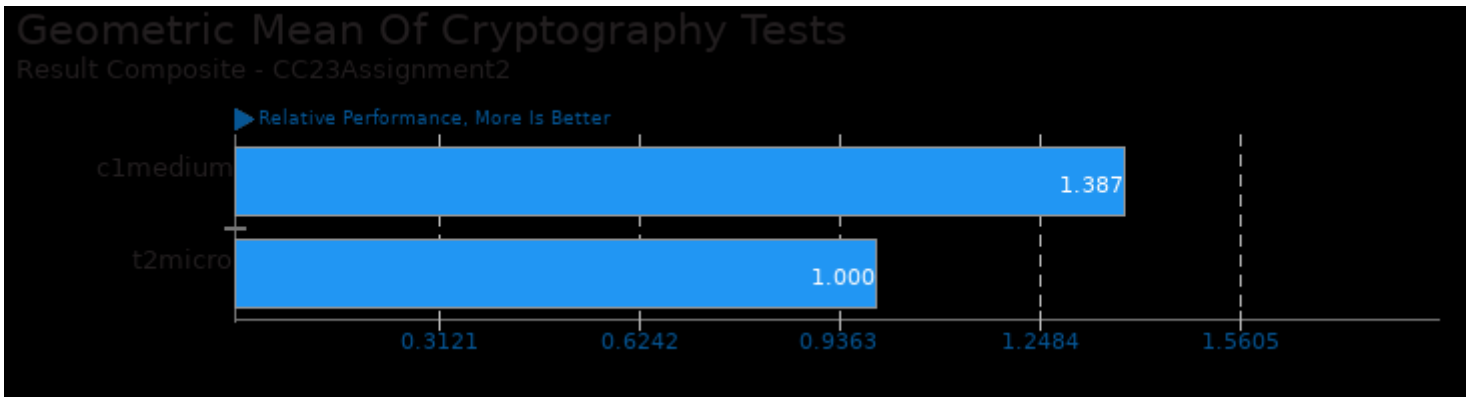
These geometric means are based upon test groupings / test suites for this result file.



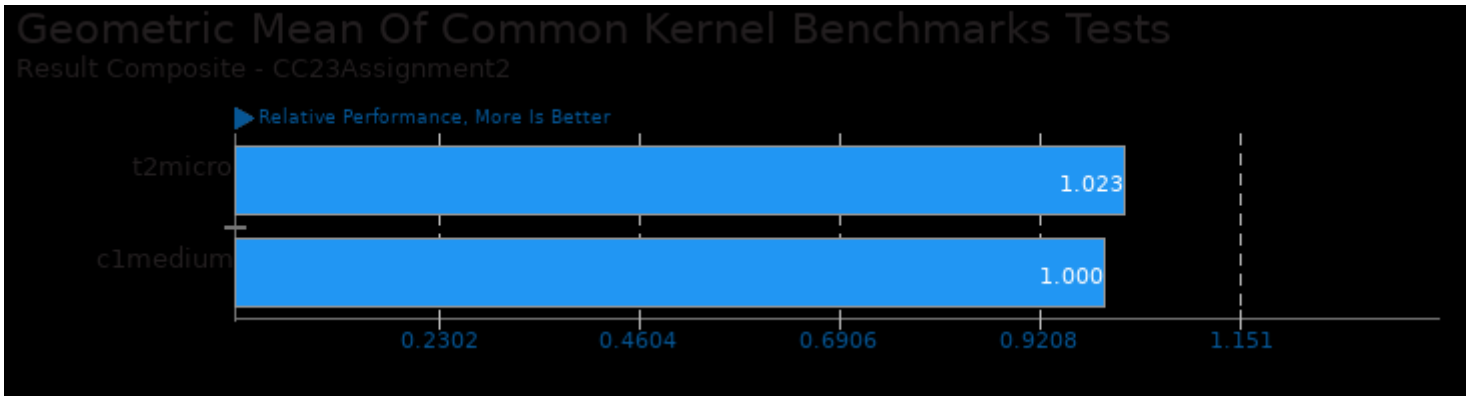

Geometric mean based upon tests: pts/encode-mp3, pts/apache, pts/john-the-ripper and pts/openssl




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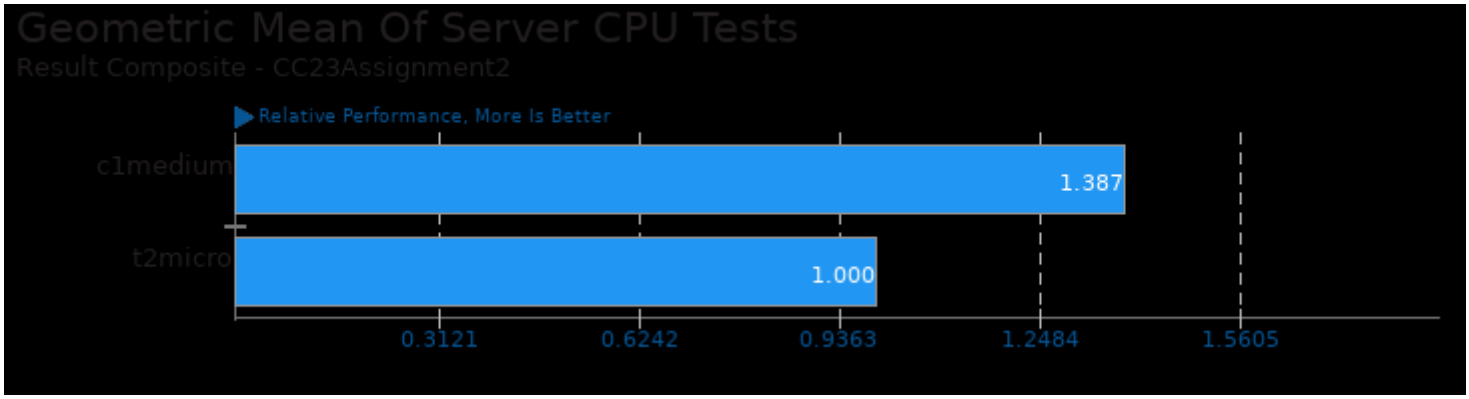

Geometric mean based upon tests: pts/openssl and pts/john-the-ripper




Geometric mean based upon tests: pts/apache and pts/openssl




Geometric mean based upon tests: pts/apache and pts/openssl




Geometric mean based upon tests: pts/john-the-ripper and pts/openssl

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 17:02.*