



## UbuntuHypervgen1

microsoft testing on Ubuntu 20.04 via the Phoronix Test Suite.

### Test Systems:

#### Hyper-V Server 2019 gen2

Processor: AMD Ryzen 5 3600 6-Core (2 Cores / 4 Threads), Motherboard: Microsoft Virtual Machine (Hyper-V UEFI v4.0 BIOS), Memory: 3968 MB + 128 MB, Disk: 54GB Virtual Disk, Graphics: hyperv\_fb

OS: Ubuntu 20.04, Kernel: 5.8.0-1041-azure (x86\_64), Vulkan: 1.0.2, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768, System Layer: microsoft

Kernel Notes: Transparent Huge Pages: always

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 / relatime,rw / Block Size: 4096

Processor Notes: CPU Microcode: 0xffffffff

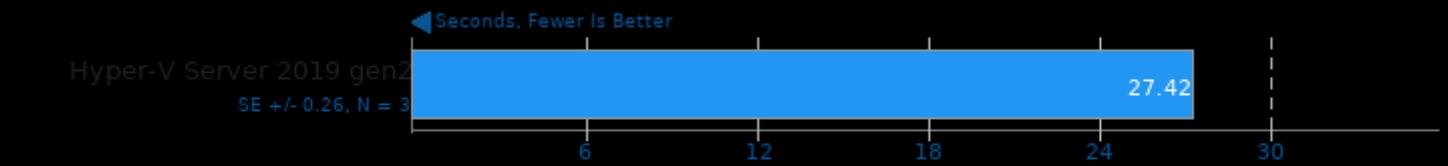
Security Notes: itlb\_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec\_store\_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre\_v1: Mitigation of usercopy/swappgs barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

## Hyper-V Server 2019 gen2

<b>t-test1 - 1 (sec)</b>	27.415
Standard Deviation	1.6%
<b>t-test1 - 2 (sec)</b>	9.082
Standard Deviation	2.6%
<b>iPerf - 192.168.1.27 - 5201 - 360 Seconds - TCP - 20 (Mbits/s)</b>	941
<b>John The Ripper - Blowfish (Real C/S)</b>	1816
Standard Deviation	1.8%
<b>John The Ripper - MD5 (Real C/S)</b>	119125
Standard Deviation	1.1%
<b>7-Zip Compression - C.S.T (MIPS)</b>	8964
Standard Deviation	1.3%
<b>OpenSSL - SHA256 (byte/s)</b>	1610776683
Standard Deviation	2%
<b>OpenSSL - RSA4096 (sign/s)</b>	327.8
Standard Deviation	1.8%
<b>OpenSSL - RSA4096 (verify/s)</b>	21088
Standard Deviation	1.1%
<b>MariaDB - 16 (Queries/sec)</b>	954
Standard Deviation	0.3%
<b>PostgreSQL pgbench - 1 - 100 - Read Only (TPS)</b>	43804
Standard Deviation	1.2%
<b>PostgreSQL pgbench - 1 - 100 - Read Only - Average Latency (ms)</b>	2.283
Standard Deviation	1.2%
<b>PostgreSQL pgbench - 1 - 100 - Read Write (TPS)</b>	969
Standard Deviation	1.2%
<b>PostgreSQL pgbench - 1 - 100 - Read Write - Average Latency (ms)</b>	103.265
Standard Deviation	1.2%
<b>SQLite Speedtest - Timed Time - Size 1,000 (sec)</b>	106.441
Standard Deviation	1.2%
<b>nginx - 100 (Reqs/sec)</b>	111111
Standard Deviation	2.3%
<b>Apache HTTP Server - 100 (Reqs/sec)</b>	19431
Standard Deviation	0.8%
<b>PHPBench - P.B.S (Score)</b>	363859
Standard Deviation	2%
<b>GnuPG - 2.7.S.F.E (sec)</b>	131.927
Standard Deviation	2.4%

## t-test1 2017-01-13

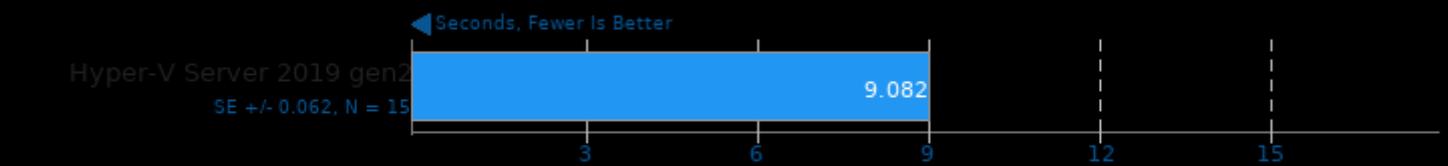
Threads: 1



1, (CC) gcc options: -pthread

## t-test1 2017-01-13

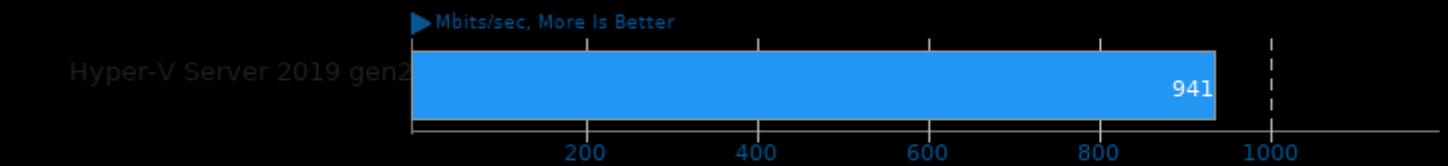
Threads: 2



1, (CC) gcc options: -pthread

## iPerf 3.7

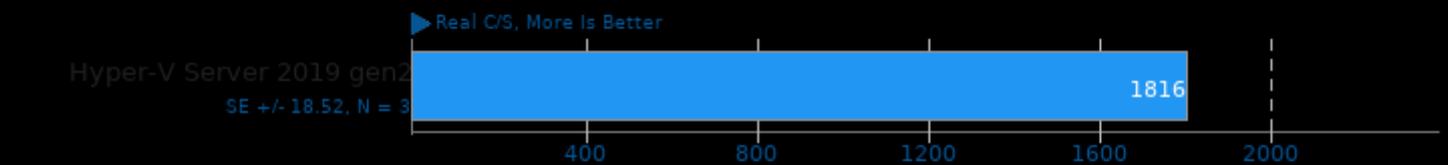
Server Address: 192.168.1.27 - Server Port: 5201 - Duration: 360 Seconds - Test: TCP - Parallel: 20



1, (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

## John The Ripper 1.9.0-jumbo-1

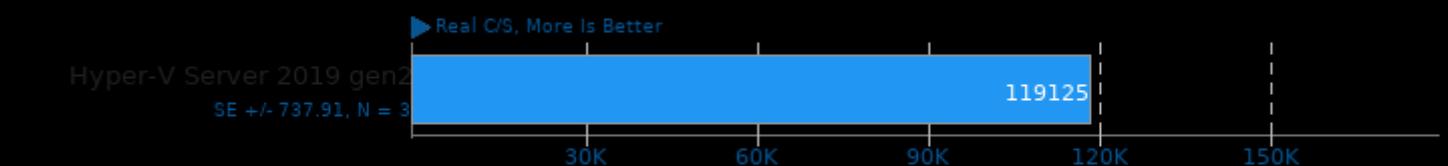
Test: Blowfish



1, (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -pthread -lm -lz -ldl -lcrypt

## John The Ripper 1.9.0-jumbo-1

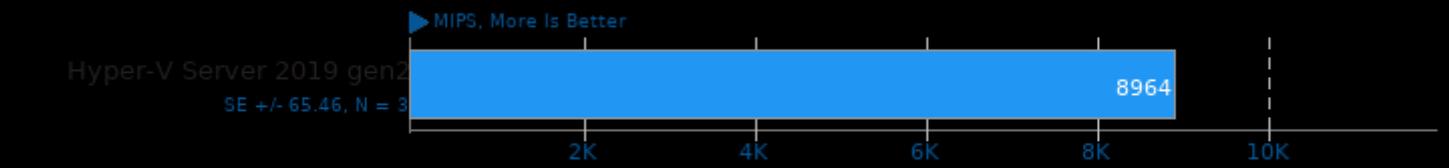
Test: MD5



1, (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -pthread -lm -lz -ldl -lcrypt

## 7-Zip Compression 16.02

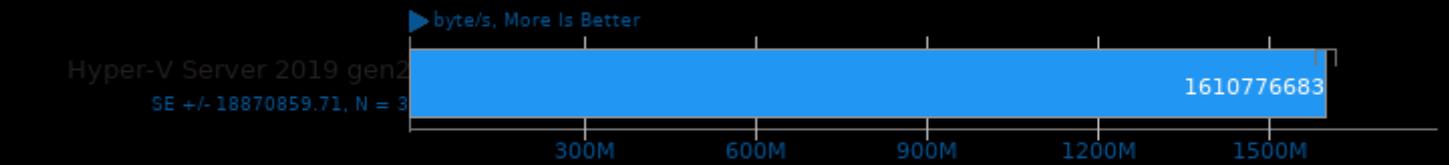
Compress Speed Test



1. (CXX) g++ options: -pipe -pthread

## OpenSSL 3.0

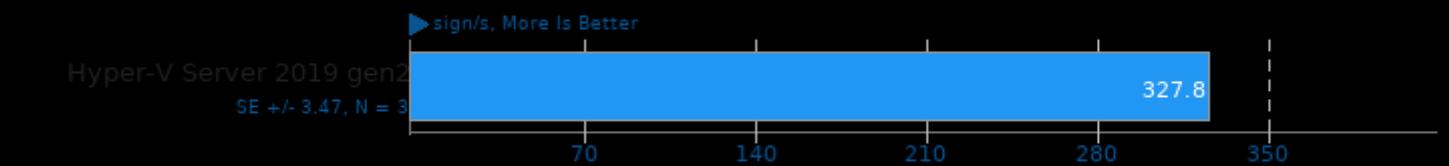
Algorithm: SHA256



1. (C) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

## OpenSSL 3.0

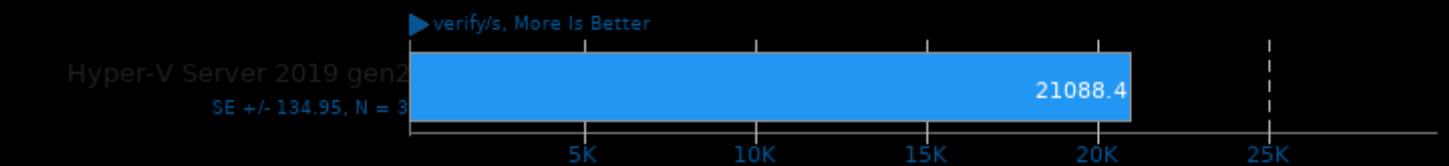
Algorithm: RSA4096



1. (C) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

## OpenSSL 3.0

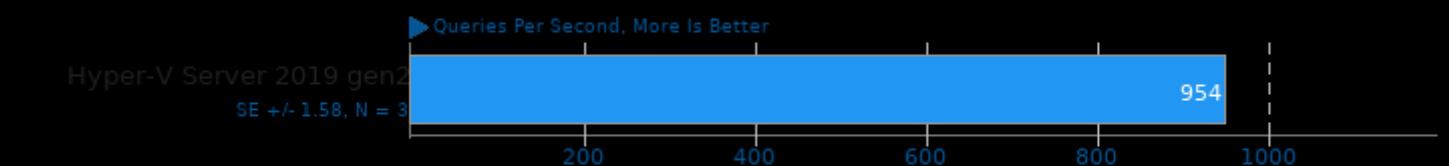
Algorithm: RSA4096



1. (C) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

## MariaDB 10.6.4

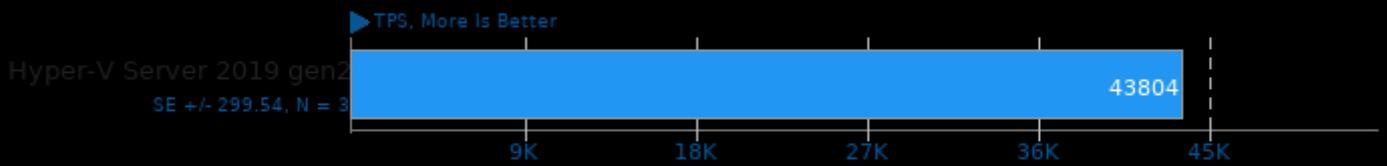
Clients: 16



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -lcrypt -lz -lm -lssl -lcrypto -pthread -ldl

## PostgreSQL pgbench 13.0

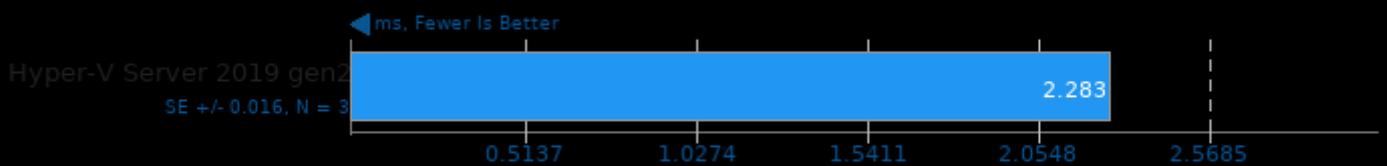
Scaling Factor: 1 - Clients: 100 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

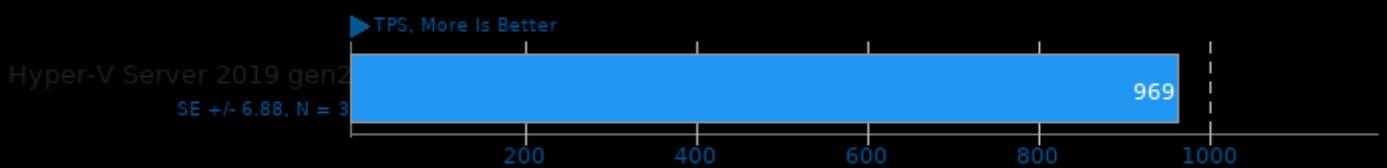
Scaling Factor: 1 - Clients: 100 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

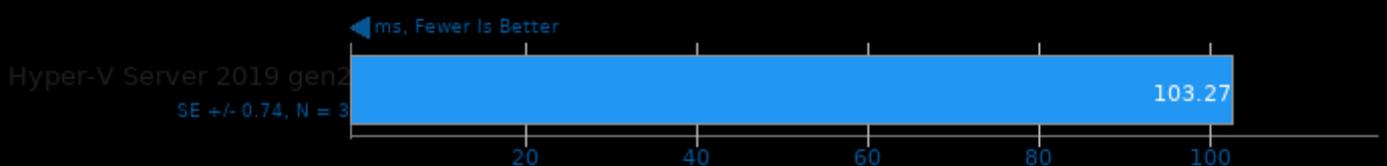
Scaling Factor: 1 - Clients: 100 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

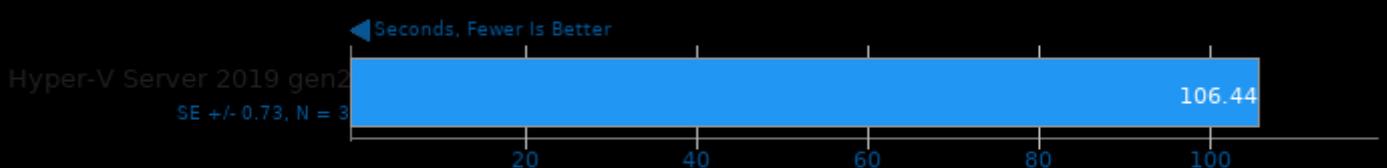
Scaling Factor: 1 - Clients: 100 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## SQLite Speedtest 3.30

Timed Time - Size 1,000



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

## nginx 1.21.1

Concurrent Requests: 100

Requests Per Second, More Is Better

Hyper-V Server 2019 gen2

SE +/- 1272.42, N = 4

111111.48

20K 40K 60K 80K 100K

1, (CC) gcc options: -ldl -pthread -lcrypt -lz -O3 -march=native

## Apache HTTP Server 2.4.48

Concurrent Requests: 100

Requests Per Second, More Is Better

Hyper-V Server 2019 gen2

SE +/- 85.74, N = 3

19431.12

4K 8K 12K 16K 20K

1, (CC) gcc options: -shared -fPIC -O2 -pthread

## PHPBench 0.8.1

PHP Benchmark Suite

Score, More Is Better

Hyper-V Server 2019 gen2

SE +/- 4161.76, N = 3

363859

80K 160K 240K 320K 400K

## GnuPG 2.2.27

2.7GB Sample File Encryption

Seconds, Fewer Is Better

Hyper-V Server 2019 gen2

SE +/- 1.60, N = 4

131.93

30 60 90 120 150

1, (CC) gcc options: -O2

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