

# SPEC CPU®2017 Integer Speed Result

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My Corporation

SPECspeed®2017\_int\_base = 2.36

SPECspeed®2017\_int\_peak = Not Run

CPU2017 License: nnn (Your SPEC license number)

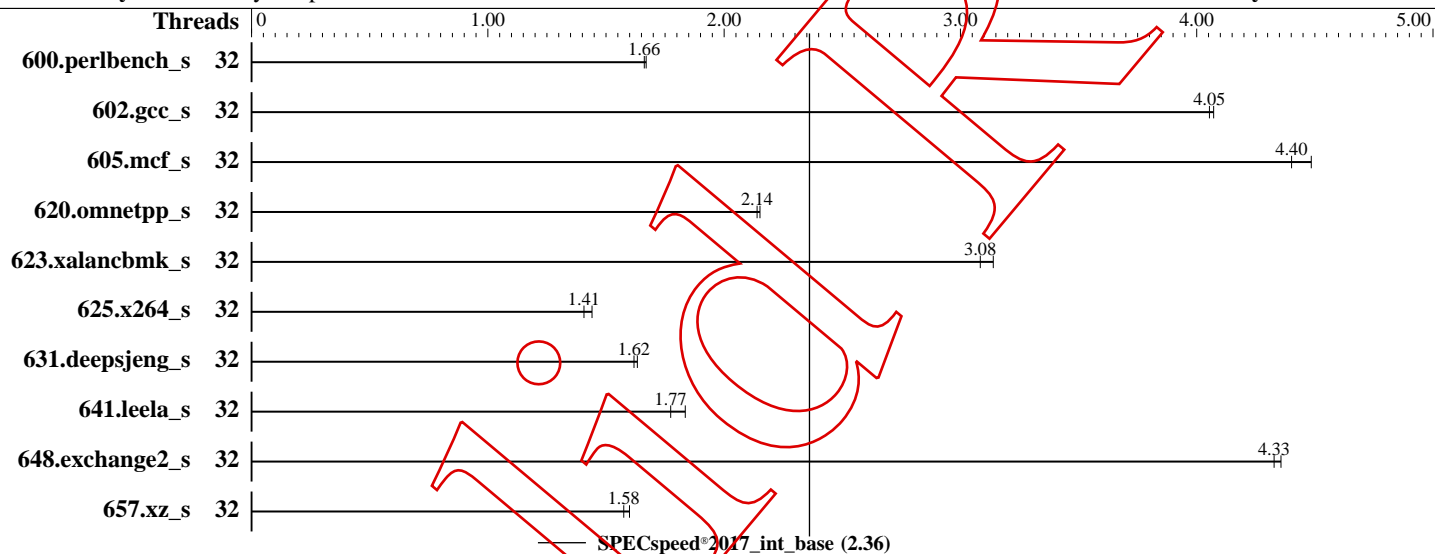
Test Sponsor: My Corporation

Tested by: My Corporation

Test Date: Oct-2021

Hardware Availability:

Software Availability:



## Hardware

CPU Name: AMD Ryzen Threadripper PRO 3955WX 16-Cores  
Max MHz:  
Nominal:  
Enabled: cores, 1 chip, threads/core  
Orderable:  
Cache L1:  
L2:  
L3:  
Other:  
Memory: 31.188 GB fixme: If using DDR4, the format is:  
'N GB (N x N GB nRxn PC4-nnnnX-X)'  
Storage: 6.9 TB add more disk info here  
Other:

## Software

OS: Ubuntu 20.04.2 LTS  
5.10.0-1044-oem  
Compiler: C/C++/Fortran: Version 9.3.0 (Ubuntu  
9.3.0-17ubuntu1~20.04) of GCC, the  
GNU Compiler Collection  
Parallel: No  
Firmware:  
File System: nfs  
System State: Run level 5 (add definition here)  
Base Pointers: 64-bit  
Peak Pointers: Not Applicable  
Other:  
Power Management: --

## Errors

'reportable' flag not set during run  
Unknown flags were used! See  
<https://www.spec.org/cpu2017/Docs/runcpu.html#flagsurl>  
for information about how to get rid of this error.

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## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	32	<b>1068</b>	<b>1.66</b>	1063	1.67									
602.gcc_s	32	978	4.07	<b>982</b>	<b>4.05</b>									
605.mcf_s	32	<b>1073</b>	<b>4.40</b>	1053	4.48									
620.omnetpp_s	32	<b>762</b>	<b>2.14</b>	758	2.15									
623.xalancbmk_s	32	<b>459</b>	<b>3.08</b>	451	3.14									
625.x264_s	32	1224	1.44	<b>1254</b>	<b>1.41</b>									
631.deepsjeng_s	32	878	1.63	<b>885</b>	<b>1.62</b>									
641.leela_s	32	929	1.84	<b>962</b>	<b>1.77</b>									
648.exchange2_s	32	675	4.36	<b>679</b>	<b>4.33</b>									
657.xz_s	32	3865	1.60	<b>3925</b>	<b>1.58</b>									

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

LD\_LIBRARY\_PATH =  
"/u/home/hettwer/toolchains/rv64g/lib64:/u/home/hettwer/toolchains/rv64g/lib/./lib64"

## Platform Notes

Sysinfo program /u/home/hettwer/cpu2017/bin/sysinfo  
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011  
running on time-x Thu Oct 14 03:02:16 2021

SUT (System Under Test) info as seen by some common utilities.

For more information on this section, see

<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : AMD Ryzen Threadripper PRO 3955WX 16-Cores

1 "physical id"s (chips)

32 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following

(Continued on next page)

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## Platform Notes (Continued)

excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 16

siblings : 32

physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu:

Architecture:

x86\_64

CPU op-mode(s):

32-bit, 64-bit

Byte Order:

Little Endian

Address sizes:

43 bits physical, 48 bits virtual

CPU(s):

32

On-line CPU(s) list:

0-31

Thread(s) per core:

2

Core(s) per socket:

16

Socket(s):

1

NUMA node(s):

1

Vendor ID:

AuthenticAMD

CPU family:

23

Model:

49

Model name:

AMD Ryzen Threadripper PRO 3955WX 16-Cores

Stepping:

0

Frequency boost:

enabled

CPU MHz:

2201.904

CPU max MHz:

4402.7339

CPU min MHz:

2200.0000

BogoMIPS:

7785.19

Virtualization:

AMD-V

L1d cache:

512 KiB

L1i cache:

512 KiB

L2 cache:

8 MiB

L3 cache:

64 MiB

NUMA node0 CPU(s):

0-31

Vulnerability Itlb multihit:

Not affected

Vulnerability L1tf:

Not affected

Vulnerability Mds:

Not affected

Vulnerability Meltdown:

Not affected

Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp

Vulnerability Spectre v1:

Mitigation; usercopy/swaps barriers and \_\_user

pointer sanitization

Vulnerability Spectre v2:

Mitigation; Full AMD retpoline, IBPB conditional,

STIBP conditional, RSB filling

Vulnerability Srbds:

Not affected

Vulnerability Tsx async abort:

Not affected

Flags:

fpu vme de pse tsc msr pae mce cx8 apic sep mtrr

pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr\_opt

pdpe1gb rdtscp lm constant\_tsc rep\_good nopl nonstop\_tsc cpuid extd\_apicid

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## Platform Notes (Continued)

aperfmp perf pni pclmulqdq monitor ssse3 fma cx16 sse4\_1 sse4\_2 movbe popcnt aes xsave  
avx f16c rdrand lahf\_lm cmp\_legacy svm extapic cr8\_legacy abm sse4a misalignsse  
3dnowprefetch osvw ibs skinit wdt tce topoext perfctr\_core perfctr\_nb bpext  
perfctr\_llc mwaitx cpb cat\_l3 cdp\_l3 hw\_pstate sme ssbd mba sev ibpb stibp vmmcall  
sev\_es fsgsbase bmi1 avx2 smep bmi2 cqm rdt\_a rdseed adx smap clflushopt clwb sha\_ni  
xsaveopt xsavec xgetbv1 xsaves cqm\_llc cqm\_occup\_llc cqm\_mbm\_total cqm\_mbm\_local  
clzero irperf xsaveerptr rdpru wbnoinvd arat npt lbrv svm\_lock nrip\_save tsc\_scale  
vmcb\_clean flushbyasid decodeassists pausefilter pfthreshold avic v\_vmsave\_vmload  
vgif umip rdpid overflow\_recov succor smca

/proc/cpuinfo cache data  
cache size : 512 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

From /proc/meminfo  
MemTotal: 32703484 KB  
HugePages\_Total: 0  
Hugepagesize: 2048 KB

/usr/bin/lsb\_release -d  
Ubuntu 20.04.2 LTS

From /etc/\*release\* /etc/\*version\*  
debian\_version: bullseye/sid  
os-release:  
NAME="Ubuntu"  
VERSION="20.04.2 LTS (Focal Fossa)"  
ID=ubuntu  
ID\_LIKE=debian  
PRETTY\_NAME="Ubuntu 20.04.2 LTS"  
VERSION\_ID="20.04"  
HOME\_URL="https://www.ubuntu.com/"  
SUPPORT\_URL="https://help.ubuntu.com/"

uname -a:  
Linux time-x 5.10.0-1044-oem #46-Ubuntu SMP Wed Aug 11 09:50:57 UTC 2021 x86\_64 x86\_64  
x86\_64 GNU/Linux

Kernel self-reported vulnerability status:

itlb_multihit:	Not affected
CVE-2018-3620 (L1 Terminal Fault):	Not affected
Microarchitectural Data Sampling:	Not affected
CVE-2017-5754 (Meltdown):	Not affected
CVE-2018-3639 (Speculative Store Bypass):	Mitigation: Speculative Store Bypass disabled

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## Platform Notes (Continued)

via prctl and seccomp  
CVE-2017-5753 (Spectre variant 1): Mitigation: usercopy/swaps barriers and \_\_user pointer sanitization  
CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline, IBPB: conditional, STIBP: conditional, RSB filling  
srbds: Not affected  
tsx\_async\_abort: Not affected  
run-level 5 Aug 26 10:31  
SPEC is set to: /u/home/hettwer/cpu2017  
Filesystem Type Size Used Avail Use% Mounted on  
nasill10.informatik.tu-muenchen.de:/srv/ill10/home nfs 6.9T 5.4T 1.3T 82% /u/home  
From /sys/devices/virtual/dmi/id  
BIOS: LENOVO S07KT1FA 05/19/2021  
Vendor: LENOVO  
Product Family: ThinkStation P620  
Cannot run dmidecode; consider saying (as root)  
chmod +s /usr/sbin/dmidecode  
(End of data from sysinfo program)

## Compiler Version Notes

```
=====
C | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base)
  | 625.x264_s(base) 657.xz_s(base)
=====
```

Using built-in specs.

COLLECT\_GCC=/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-gcc

COLLECT\_LTO\_WRAPPER=/u/home/hettwer/toolchains/rv64g/libexec/gcc/riscv64-unknown-linux-gnu/11.1.0/lto-wrapper

Target: riscv64-unknown-linux-gnu

Configured with:

/u/home/hettwer/build-rv64g/./riscv-gnu-toolchain/riscv-gcc/configure

--target=riscv64-unknown-linux-gnu

--prefix=/u/home/hettwer/toolchains/rv64g

--with-sysroot=/u/home/hettwer/toolchains/rv64g/sysroot --with-system-zlib

--enable-shared --enable-tls --enable-languages=c,c++,fortran

--disable-libmudflap --disable-libssp --disable-libquadmath

--disable-lsanitizer --disable-nls --disable-bootstrap

--src=../../riscv-gnu-toolchain/riscv-gcc --disable-multilib

--with-abi=lp64d --with-arch=rv64imafdc --with-tune=rocket

'CFLAGS\_FOR\_TARGET=-O2 -mcmmodel=medlow' 'CXXFLAGS\_FOR\_TARGET=-O2

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## Compiler Version Notes (Continued)

```
-mcmmodel=medlow'  
Thread model: posix  
Supported LTO compression algorithms: zlib  
gcc version 11.1.0 (GCC)
```

```
=====  
C++      | 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)  
          | 641.leela_s(base)
```

Using built-in specs.

COLLECT\_GCC=/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-g++

COLLECT\_LTO\_WRAPPER=/u/home/hettwer/toolchains/rv64g/libexec/gcc/riscv64-unknown-linux-gnu/11.1.0/lto-wrapper

Target: riscv64-unknown-linux-gnu

Configured with:

```
/u/home/hettwer/build-rv64g/./riscv-gnu-toolchain/riscv-gcc/configure  
--target=riscv64-unknown-linux-gnu  
--prefix=/u/home/hettwer/toolchains/rv64g  
--with-sysroot=/u/home/hettwer/toolchains/rv64g/sysroot --with-system-zlib  
--enable-shared --enable-tls --enable-languages=c,c++,fortran  
--disable-libmudflap --disable-libssp --disable-libquadmath  
--disable-lsanitizer --disable-nls --disable-bootstrap  
--src=../../riscv-gnu-toolchain/riscv-gcc --disable-multilib  
--with-abi=lp64d --with-arch=rv64imafdc --with-tune=rocket  
'CFLAGS_FOR_TARGET=-O2 -mcmmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2  
-mcmmodel=medlow'
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 11.1.0 (GCC)

```
=====  
Fortran | 648.exchange2_s(base)
```

Using built-in specs.

COLLECT\_GCC=/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-gfortran

COLLECT\_LTO\_WRAPPER=/u/home/hettwer/toolchains/rv64g/libexec/gcc/riscv64-unknown-linux-gnu/11.1.0/lto-wrapper

Target: riscv64-unknown-linux-gnu

Configured with:

```
/u/home/hettwer/build-rv64g/./riscv-gnu-toolchain/riscv-gcc/configure  
--target=riscv64-unknown-linux-gnu  
--prefix=/u/home/hettwer/toolchains/rv64g  
--with-sysroot=/u/home/hettwer/toolchains/rv64g/sysroot --with-system-zlib  
--enable-shared --enable-tls --enable-languages=c,c++,fortran  
--disable-libmudflap --disable-libssp --disable-libquadmath  
--disable-lsanitizer --disable-nls --disable-bootstrap  
--src=../../riscv-gnu-toolchain/riscv-gcc --disable-multilib
```

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## Compiler Version Notes (Continued)

```
--with-abi=lp64d --with-arch=rv64imafdc --with-tune=rocket  
'CFLAGS_FOR_TARGET=-O2 -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2  
-mcmodel=medlow'  
Thread model: posix  
Supported LTO compression algorithms: zlib  
gcc version 11.1.0 (GCC)
```

## Base Unknown Flags

```
600.perlbench_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CC)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

```
602.gcc_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CC)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

```
605.mcf_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CC)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

```
620.omnetpp_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CXX)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

```
623.xalanbmk_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CXX)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

```
625.x264_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CC)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

```
631.deepsjeng_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CXX)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA_OPTIMIZE)
```

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## Base Unknown Flags (Continued)

641.leela\_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CXX)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA\_OPTIMIZE)

648.exchange2\_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in FC)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA\_OPTIMIZE)

657.xz\_s: "/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in CC)  
"/u/home/hettwer/toolchains/rv64g/bin/riscv64-unknown-linux-gnu-" (in LD)  
"-fcommon -static" (in OPTIMIZE)  
"-fno-openmp" (in EXTRA\_OPTIMIZE)

## Base Compiler Invocation

C benchmarks:

gcc

C++ benchmarks:

g++

Fortran benchmarks:

gfortran

## Base Portability Flags

600.perlbench\_s: -DSPEC\_LINUX\_X64 -DSPEC\_LP64  
602.gcc\_s: -DSPEC\_LP64  
605.mcf\_s: -DSPEC\_LP64  
620.omnetpp\_s: -DSPEC\_LP64  
623.xalancbmk\_s: -DSPEC\_LINUX -DSPEC\_LP64  
625.x264\_s: -DSPEC\_LP64  
631.deepsjeng\_s: -DSPEC\_LP64  
641.leela\_s: -DSPEC\_LP64  
648.exchange2\_s: -DSPEC\_LP64  
657.xz\_s: -DSPEC\_LP64



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## Base Optimization Flags

C benchmarks:

-std=c99 -O3 -fno-unsafe-math-optimizations -DSPEC\_SUPPRESS\_OPENMP  
-fno-strict-aliasing -fgnu89-inline

C++ benchmarks:

-std=c++03 -O3 -fno-unsafe-math-optimizations -DSPEC\_SUPPRESS\_OPENMP

Fortran benchmarks:

-O3 -fno-unsafe-math-optimizations -DSPEC\_SUPPRESS\_OPENMP

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For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.0 on 2021-10-14 03:02:15+0200.

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