SPEC CPU®2017 Integer Speed Result

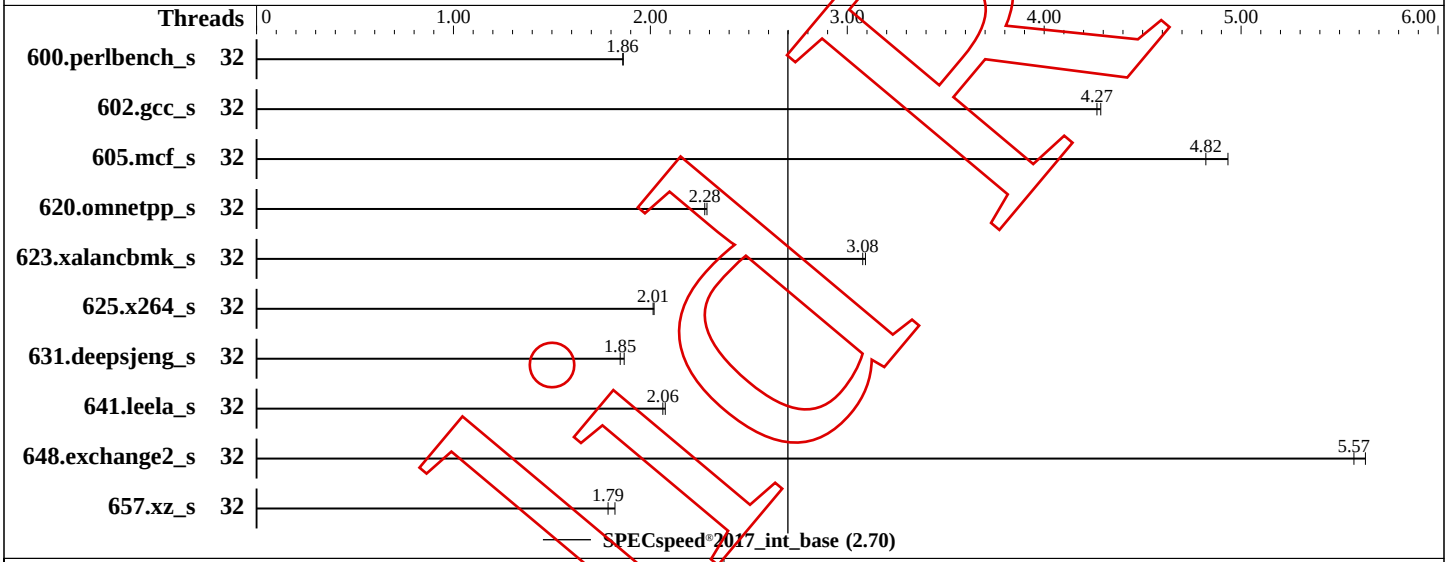
My Corporation

SPECspeed®2017_int_base = 2.70

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	**955**	**1.86**	953	1.86									
602.gcc_s	32	929	4.29	**933**	**4.27**									
605.mcf_s	32	**979**	**4.82**	957	4.93									
620.omnetpp_s	32	**717**	**2.28**	713	2.29									
623.xalancbmk_s	32	458	3.09	**460**	**3.08**									
625.x264_s	32	**876**	**2.01**	874	2.02									
631.deepsjeng_s	32	**776**	**1.85**	768	1.87									
641.leela_s	32	**827**	**2.06**	822	2.08									
648.exchange2_s	32	**528**	**5.57**	522	5.63									
657.xz_s	32	3396	1.82	**3463**	**1.79**									

SPECspeed®2017_int_base = 2.70

SPECspeed®2017_int_peak = Not Run

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/rv64
     g/lib/:/lib64"
```

Platform Notes

```
 Sysinfo program /u/home/hettwer/cpu2017/bin/sysinfo
 Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
 running on time-x Wed Oct 13 11:25:41 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)

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:                         3325.847
      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/swapgs 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)

```
      aperfmperf 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/swapgs 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
    nasil10.informatik.tu-muenchen.de:/srv/il10/home nfs   6.9T  5.4T  1.3T  81% /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-libsanitizer --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   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
```

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Compiler Version Notes (Continued)

```
  -mcmodel=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-libsanitizer --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   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=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-libsanitizer --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.xalancbmk_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)

(Continued on next page)

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

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`

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.1.0 on 2021-10-13 11:25:40+0200.
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