

SPEC® CPU2017 Integer Speed Result

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(Test Sponsor: Red Hat, Inc.)

SPECspeed2017_int_base = 6.86

SPECspeed2017_int_peak = 8.34

CPU2017 License: 0002991

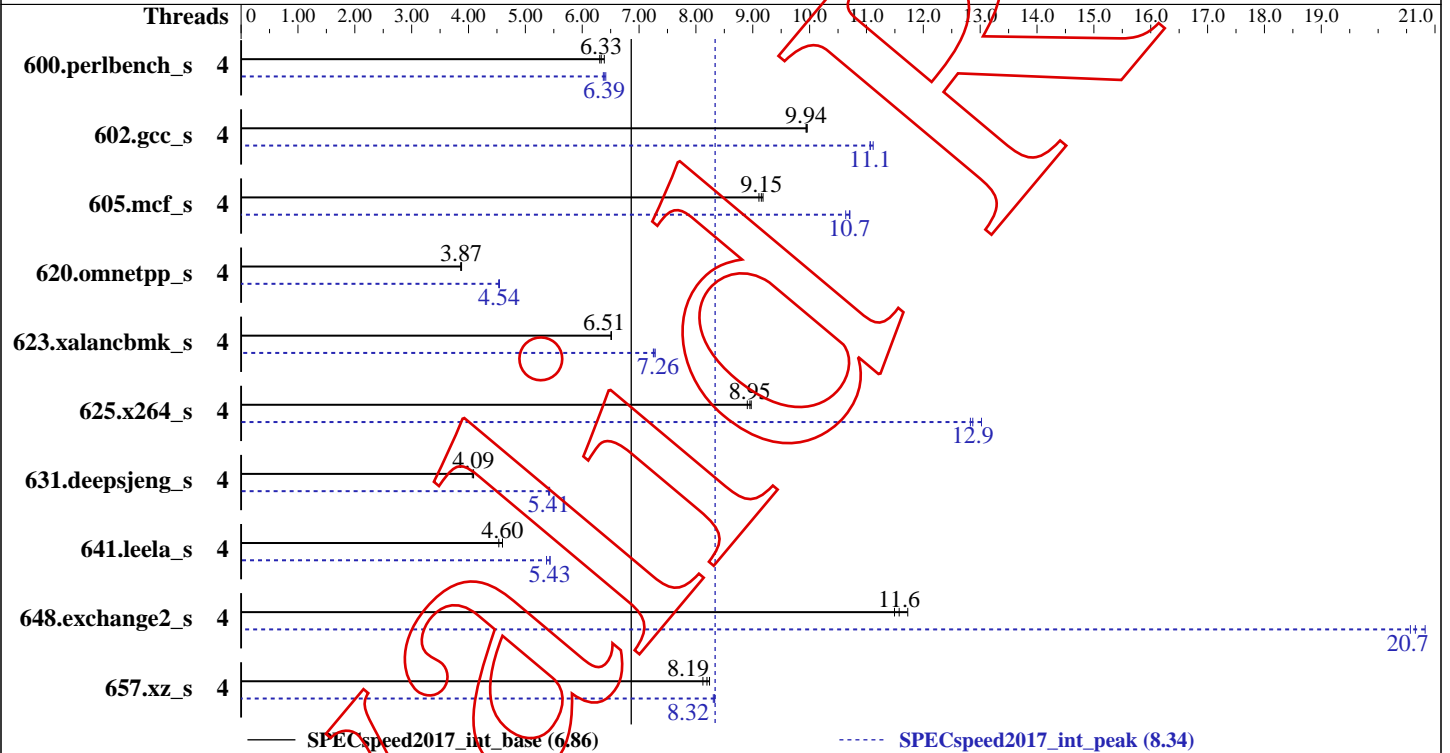
Test Sponsor: Red Hat, Inc.

Tested by: Vladimir Makarov

Test Date: Jun-2024

Hardware Availability: Now

Software Availability:



Hardware

CPU Name: AMD Ryzen 7 3800X 8-Core Processor
Max MHz.:
Nominal: 2645.858
Enabled: 16 cores, 1 chip, threads/core
Orderable:
Cache L1:
L2: 512 KB
L3:
Other:
Memory: 32889052 KB
'N GB (M x N GB nRxn PCn-nnnnnR-n, ECC)'
Storage: 372 GB add more disk info here
Other:

Software

OS: Linux 5.5.11-200.fc31.x86_64
5.5.11-200.fc31.x86_64
Compiler: gcc version 15.0.0 20240605 (experimental) (GCC)
Parallel: Yes
Firmware:
File System: ext4
System State: multiuser
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other:

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 | 4 | 280 | 6.33 | 281 | 6.31 | 278 | 6.39 | 4 | 279 | 6.37 | 278 | 6.39 | 277 | 6.41 |
| 602.gcc_s | 4 | 401 | 9.94 | 400 | 9.96 | 401 | 9.94 | 4 | 358 | 11.1 | 360 | 11.1 | 360 | 11.1 |
| 605.mcf_s | 4 | 516 | 9.15 | 518 | 9.11 | 514 | 9.18 | 4 | 441 | 10.7 | 441 | 10.7 | 444 | 10.6 |
| 620.omnetpp_s | 4 | 421 | 3.88 | 422 | 3.87 | 422 | 3.86 | 4 | 359 | 4.54 | 359 | 4.54 | 360 | 4.53 |
| 623.xalancbmk_s | 4 | 218 | 6.51 | 218 | 6.51 | 217 | 6.52 | 4 | 195 | 7.25 | 195 | 7.26 | 195 | 7.28 |
| 625.x264_s | 4 | 198 | 8.90 | 197 | 8.97 | 197 | 8.95 | 4 | 138 | 12.8 | 135 | 13.0 | 137 | 12.9 |
| 631.deepsjeng_s | 4 | 352 | 4.07 | 351 | 4.09 | 350 | 4.09 | 4 | 265 | 5.41 | 264 | 5.43 | 265 | 5.41 |
| 641.leela_s | 4 | 371 | 4.60 | 371 | 4.60 | 376 | 4.53 | 4 | 318 | 5.37 | 314 | 5.43 | 314 | 5.43 |
| 648.exchange2_s | 4 | 256 | 11.5 | 251 | 11.7 | 254 | 11.6 | 4 | 142 | 20.7 | 143 | 20.6 | 141 | 20.8 |
| 657.xz_s | 4 | 750 | 8.24 | 761 | 8.12 | 754 | 8.19 | 4 | 744 | 8.31 | 743 | 8.32 | 742 | 8.33 |

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

General Notes

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

```
LD_LIBRARY_PATH = */notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/lib64:/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/lib::usr/lib64:/usr/lib:/lib64
```

Platform Notes

Sysinfo program `/notnfs/vmakarov/spec2017/bin/sysinfo`
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on to-ryzen.usersys.redhat.com Wed Jun 5 16:56:20 2024

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 7 3800X 8-Core Processor

1 "physical id"s (chips)

16 "processors"

cores siblings (Caution: counting these is hw and system dependent. The following excerpts from `/proc/cpuinfo` might not be reliable. Use with caution.)

cpu cores : 8

siblings : 16

physical 0: cores 0 1 2 3 4 5 6 7

From `lscpu`:

Architecture: x86_64

CPU op-mode(s): 32-bit, 64-bit

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Platform Notes (Continued)

Byte Order: Little Endian
Address sizes: 43 bits physical, 48 bits virtual
CPU(s): 16
On-line CPU(s) list: 0-15
Thread(s) per core: 2
Core(s) per socket: 8
Socket(s): 1
NUMA node(s): 1
Vendor ID: AuthenticAMD
CPU family: 23
Model: 113
Model name: AMD Ryzen 7 3800X 8-Core Processor
Stepping: 0
Frequency boost: enabled
CPU MHz: 2020.747
CPU max MHz: 3900.0000
CPU min MHz: 2200.0000
BogoMIPS: 7785.39
Virtualization: AMD-V
L1d cache: 256 KiB
L1i cache: 256 KiB
L2 cache: 4 MiB
L3 cache: 32 MiB
NUMA node0 CPU(s): 0-15
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 always-on, RSB filling
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 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 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

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Software Availability:

Platform Notes (Continued)

```
/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:      32889052 kB
HugePages_Total:       0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
```

```
fedora-release: Fedora release 31 (Thirty One)
```

```
os-release:
```

```
NAME=Fedora
```

```
VERSION="31 (Workstation Edition)"
```

```
ID=fedora
```

```
VERSION_ID=31
```

```
VERSION_CODENAME=""
```

```
PLATFORM_ID="platform:f31"
```

```
PRETTY_NAME="Fedora 31 (Workstation Edition)"
```

```
ANSI_COLOR="0;34"
```

```
redhat-release: Fedora release 31 (Thirty One)
```

```
system-release: Fedora release 31 (Thirty One)
```

```
system-release-cpe: cpe:/o:fedoraproject:fedora:31
```

```
uname -a:
```

```
Linux to-ryzen.usersys.redhat.com 5.5.11-200.fc31.x86_64 #1 SMP Mon Mar 23 17:32:43
```

```
UTC 2020 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 2024-06-02 10:19
```

```
SPEC is set to: /notnfs/vmakarov/spec2017
```

| Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
|---|------|------|------|-------|------|------------|
| /dev/mapper/fedora_localhost--live-home | ext4 | 372G | 94G | 260G | 27% | /home |

```
Additional information from dmidecode follows. WARNING: Use caution when you interpret
this section. The 'dmidecode' program reads system data which is "intended to allow
hardware to be accurately determined", but the intent may not be met, as there are
frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.
```

```
(End of data from sysinfo program)
```

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Test Date: Jun-2024
Hardware Availability: New
Software Availability:

Compiler Version Notes

```
=====
CXXC 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak)
      631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
=====
```

Using built-in specs.

COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/g++

COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/./libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper

Target: x86_64-pc-linux-gnu

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 15.0.0 20240605 (experimental) (GCC)

```
=====
CC 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak)
      625.x264_s(base, peak) 657.xz_s(base, peak)
=====
```

Using built-in specs.

COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/gcc

COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/./libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper

Target: x86_64-pc-linux-gnu

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 15.0.0 20240605 (experimental) (GCC)

```
=====
FC 648.exchange2_s(base, peak)
=====
```

Using built-in specs.

COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/gfortran

COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/./libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper

Target: x86_64-pc-linux-gnu

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
```

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Software Availability:

Compiler Version Notes (Continued)

```
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 15.0.0 20240605 (experimental) (GCC)
-----
```

Base Unknown Flags

```
600.perlbench_s: "-fcommonARRAY(0xac16598) "-fcommonARRAY(0xac0dc88)
602.gcc_s: "-fcommonARRAY(0xac16538) "-fcommonARRAY(0xac19988)
605.mcf_s: "-fcommonARRAY(0xac165b0) "-fcommonARRAY(0xac1fa98)
620.omnetpp_s: "-fcommon -std=c++14ARRAY(0xabdccc98)
"-fcommon -std=c++14ARRAY(0xac33c00)
623.xalancbmk_s: "-fcommon -std=c++14ARRAY(0xac11378)
"-fcommon -std=c++14ARRAY(0xad62ee8)
625.x264_s: "-fcommonARRAY(0xac1dac8) "-fcommonARRAY(0xad64440)
631.deepsjeng_s: "-fcommon -std=c++14ARRAY(0xac1dcf0)
"-fcommon -std=c++14ARRAY(0xad62080)
641.leela_s: "-fcommon -std=c++14ARRAY(0xac647f0)
"-fcommon -std=c++14ARRAY(0xad61110)
648.exchange2_s: "-fallow-argument-mismatchARRAY(0xad62a68)
"-fallow-argument-mismatchARRAY(0xad8d4e0)
657.xz_s: "-fcommonARRAY(0xad631b8) "-fcommonARRAY(0xad9f840)
```

Peak Unknown Flags

```
600.perlbench_s: "-fcommonARRAY(0xac16598) "-fcommonARRAY(0xac0dc88)
602.gcc_s: "-fcommonARRAY(0xac16538) "-fcommonARRAY(0xac19988)
605.mcf_s: "-fcommonARRAY(0xac165b0) "-fcommonARRAY(0xac1fa98)
```

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Peak Unknown Flags (Continued)

620.omnetpp_s: "-fcommon -std=c++14ARRAY(0xabd9c98)
"-fcommon -std=c++14ARRAY(0xac33c00)

623.xalancbmk_s: "-fcommon -std=c++14ARRAY(0xac11378)
"-fcommon -std=c++14ARRAY(0xad62ee8)

625.x264_s: "-fcommonARRAY(0xac1dac8) "-fcommonARRAY(0xad64440)

631.deepsjeng_s: "-fcommon -std=c++14ARRAY(0xac1dcf0)
"-fcommon -std=c++14ARRAY(0xad62080)

641.leela_s: "-fcommon -std=c++14ARRAY(0xac647f0)
"-fcommon -std=c++14ARRAY(0xad61110)

648.exchange2_s: "-fallow-argument-mismatchARRAY(0xad62a68)
"-fallow-argument-mismatchARRAY(0xad8d4e0)

657.xz_s: "-fcommonARRAY(0xad631b8) "-fcommonARRAY(0xad9f840)

600.perlbench_s: "-fcommonARRAY(0xad644e8) "-fcommonARRAY(0xad9f618)
"-fltoARRAY(0xad9f8a0)

602.gcc_s: "-fcommonARRAY(0xad61498) "-fcommonARRAY(0xadaedf8)
"-fltoARRAY(0xadaae08)

605.mcf_s: "-fcommonARRAY(0xad858a8) "-fcommonARRAY(0xadaadd8)
"-fltoARRAY(0xadaf038)

620.omnetpp_s: "-fcommon -std=c++14ARRAY(0xad62a50)
"-fcommon -std=c++14ARRAY(0xadac7c0)
"-fltoARRAY(0xadae218)

623.xalancbmk_s: "-fcommon -std=c++14ARRAY(0xad90468)
"-fcommon -std=c++14ARRAY(0xadaee70)
"-fltoARRAY(0xadaea08)

625.x264_s: "-fcommonARRAY(0xadad588) "-fcommonARRAY(0xada5720)
"-fltoARRAY(0xadac730)

631.deepsjeng_s: "-fcommon -std=c++14ARRAY(0xadae990)
"-fcommon -std=c++14ARRAY(0xadad978)
"-fltoARRAY(0xad8240)

641.leela_s: "-fcommon -std=c++14ARRAY(0xadaee88)
"-fcommon -std=c++14ARRAY(0xadadd38)
"-fltoARRAY(0xad8d50)

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Peak Unknown Flags (Continued)

648.exchange2_s: "-fallow-argument-mismatchARRAY(0xada5738)
"-fallow-argument-mismatchARRAY(0xadabb70)
"-fltoARRAY(0xad9978)

657.xz_s: "-fcommonARRAY(0xad9f960) "-fcommonARRAY(0xad8b88)
"-fltoARRAY(0xadba5a0)

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.xalanbmk_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:

-z muldefs -O2 -mtune=generic -fopenmp -DSPEC_OPENMP -fgnu89-inline
-fno-strict-aliasing

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Base Optimization Flags (Continued)

C++ benchmarks:
-O2 -mtune=generic -fopenmp -DSPEC_OPENMP

Fortran benchmarks:
-O2 -mtune=generic -DSPEC_OPENMP -fopenmp

Peak Compiler Invocation

C benchmarks:
gcc

C++ benchmarks:
g++

Fortran benchmarks:
gfortran

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
-z muldefs -Ofast -mtune=corei7 -march=core-avx2 -fopenmp
-DSPEC_OPENMP -fgnu89-inline -fno-strict-aliasing

C++ benchmarks:
-Ofast -mtune=corei7 -march=core-avx2 -fopenmp -DSPEC_OPENMP

Fortran benchmarks:
-Ofast -mtune=corei7 -march=core-avx2 -DSPEC_OPENMP -fopenmp

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

Tested with SPEC CPU2017 v1.0.1 on 2024-06-05 16:56:20-0400.

Report generated on 2024-06-05 22:49:45 by CPU2017 PDF formatter v5748.