SPEC® CPU2017 Integer Speed Result

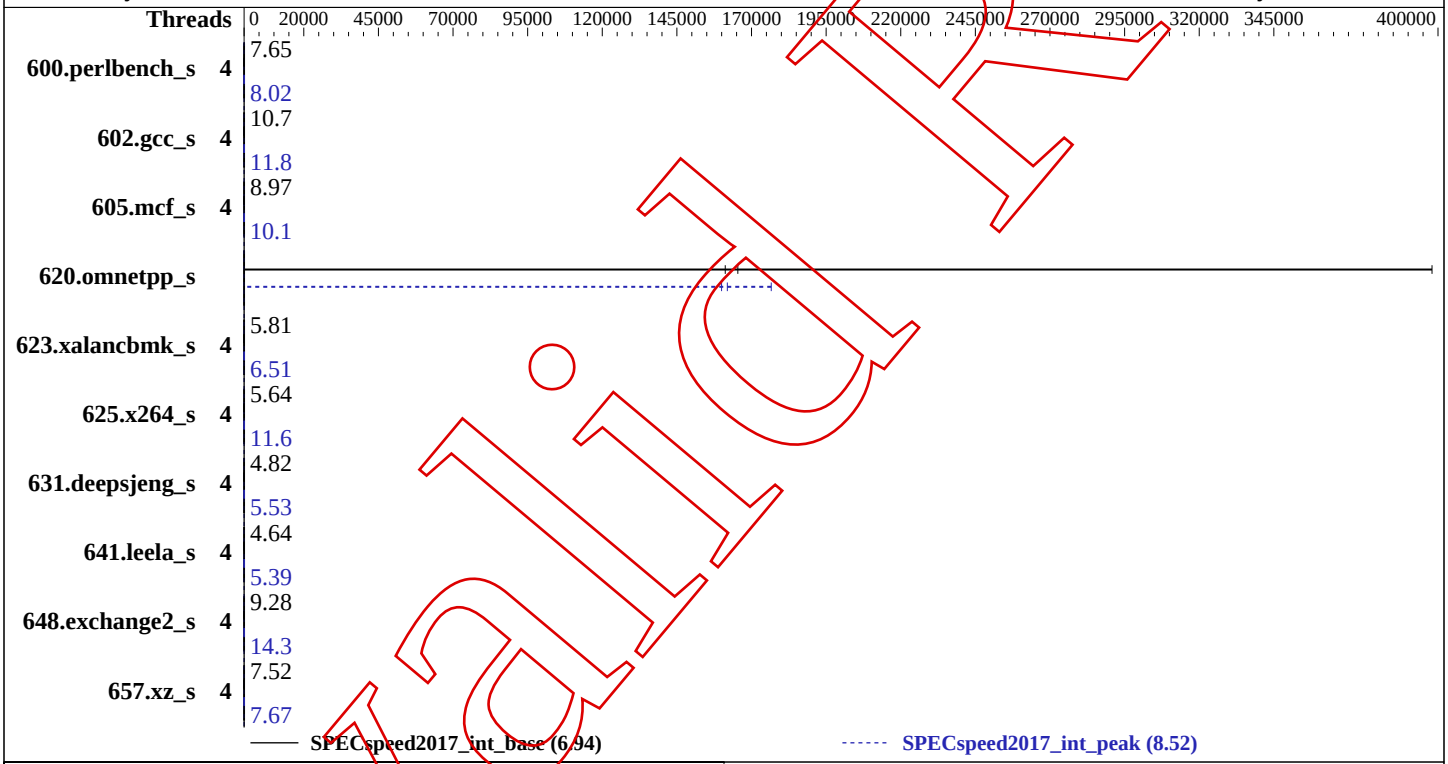
(Test Sponsor: Red Hat, Inc.)

SPECspeed2017_int_base = 6.94

SPECspeed2017_int_peak = 8.52

CPU2017 License: 0002991
Test Sponsor: Red Hat, Inc.
Tested by: Vladimir Makarov

Test Date: Jul-2021
Hardware Availability: Now
Software Availability:



Hardware

CPU Name: Intel(R) Core(TM) i7-8700K CPU @ 3.70GHz
Max MHz.:
Nominal: 1478.122
Enabled: 6 cores, 1 chip, threads/core
Orderable:
Cache L1:
L2: 12288 KB
L3:
Other:
Memory: 16300620 kB
'N GB (M x N GB nRxn PCn-nnnnnR-n, ECC)'
Storage: 192 GB add more disk info here
Other:

Software

OS: Linux 4.17.3-200.fc28.x86_64
4.17.3-200.fc28.x86_64
Compiler: gcc version 12.0.0 20210707 (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
620.omnetpp_s (base) had invalid runs!
620.omnetpp_s (peak) had invalid runs!
Run of 620.omnetpp_s (peak) was not valid; status is RE
Run of 620.omnetpp_s (base) was not valid; status is RE

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Errors (Continued)

Unknown flags were used! See
https://www.spec.org/cpu2017/Docs/runcpu.html#flagsurl
for information about how to get rid of this error.

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	4	231	7.68	**232**	**7.65**	233	7.62	4	222	7.99	**221**	**8.02**	221	8.04
602.gcc_s	4	373	10.7	**374**	**10.7**	374	10.6	4	339	11.8	**339**	**11.8**	339	11.7
605.mcf_s	4	**527**	**8.97**	536	8.81	526	8.98	4	471	10.0	**466**	**10.1**	458	10.3
620.omnetpp_s	4	0.00410	0.00	0.00986	0.00	0.0101	0.00	4	0.0102	0.00	0.0101	0.00	0.00923	0.00
623.xalancbmk_s	4	245	5.78	**244**	**5.81**	240	5.91	4	219	6.47	217	6.54	**218**	**6.51**
625.x264_s	4	313	5.64	**313**	**5.64**	313	5.63	4	**152**	**11.6**	152	11.6	152	11.6
631.deepsjeng_s	4	297	4.82	297	4.82	**297**	**4.82**	4	259	5.54	260	5.52	**259**	**5.53**
641.leela_s	4	367	4.64	**368**	**4.64**	368	4.64	4	317	5.39	**316**	**5.39**	316	5.39
648.exchange2_s	4	318	9.26	**317**	**9.28**	316	9.29	4	207	14.2	206	14.3	**206**	**14.3**
657.xz_s	4	**822**	**7.52**	820	7.54	822	7.52	4	**806**	**7.67**	805	7.68	806	7.67
SPECspeed2017_int_base =			**6.94**											
SPECspeed2017_int_peak =										**8.52**				

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.ton8/lib64:/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.ton8/lib::/usr/lib64/:/usr/lib/:/lib64"
```

Platform Notes

```
 Sysinfo program /notnfs/vmakarov/spec2017/bin/sysinfo
 Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
 running on ton8 Wed Jul  7 09:45:12 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 : Intel(R) Core(TM) i7-8700K CPU @ 3.70GHz
       1  "physical id"s (chips)
       6 "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 : 6
```

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Platform Notes (Continued)

```
       siblings  : 6
       physical 0: cores 0 1 2 3 4 5

 From lscpu:
      Architecture:        x86_64
      CPU op-mode(s):      32-bit, 64-bit
      Byte Order:          Little Endian
      CPU(s):              6
      On-line CPU(s) list: 0-5
      Thread(s) per core:  1
      Core(s) per socket:  6
      Socket(s):           1
      NUMA node(s):        1
      Vendor ID:           GenuineIntel
      CPU family:          6
      Model:               158
      Model name:          Intel(R) Core(TM) i7-8700K CPU @ 3.70GHz
      Stepping:            10
      CPU MHz:             4098.235
      CPU max MHz:         4700.0000
      CPU min MHz:         800.0000
      BogoMIPS:            7392.00
      Virtualization:      VT-x
      L1d cache:           32K
      L1i cache:           32K
      L2 cache:            256K
      L3 cache:            12288K
      NUMA node0 CPU(s):   0-5
      Flags:               fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
      pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
      lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
      aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3
      sdbg fma cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer
      aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault invpcid_single pti
      ibrs ibpb stibp tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle
      avx2 smep bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt intel_pt xsaveopt
      xsavec xgetbv1 xsaves dtherm ida arat pln pts hwp hwp_notify hwp_act_window hwp_epp

 /proc/cpuinfo cache data
    cache size : 12288 KB

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

 From /proc/meminfo
    MemTotal:       16300620 kB
    HugePages_Total:       0
```

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Platform Notes (Continued)

```
    Hugepagesize:       2048 kB

 From /etc/*release* /etc/*version*
    fedora-release: Fedora release 28 (Twenty Eight)
    os-release:
       NAME=Fedora
       VERSION="28 (Workstation Edition)"
       ID=fedora
       VERSION_ID=28
       PLATFORM_ID="platform:f28"
       PRETTY_NAME="Fedora 28 (Workstation Edition)"
       ANSI_COLOR="0;34"
       CPE_NAME="cpe:/o:fedoraproject:fedora:28"
    redhat-release: Fedora release 28 (Twenty Eight)
    system-release: Fedora release 28 (Twenty Eight)
    system-release-cpe: cpe:/o:fedoraproject:fedora:28

 uname -a:
    Linux ton8 4.17.3-200.fc28.x86_64 #1 SMP Tue Jun 26 14:17:07 UTC 2018 x86_64 x86_64
    x86_64 GNU/Linux


 SPEC is set to: /notnfs/vmakarov/spec2017
    Filesystem             Type  Size  Used Avail Use% Mounted on
    /dev/mapper/fedora-home ext4  192G   47G  136G  26% /notnfs

 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)
```

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.ton8/bin/g++
COLLECT_LTO_WRAPPER=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.ton8/libexec/gcc/x86_64-pc-linux-gnu/12.0.0/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.ton8
```

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Compiler Version Notes (Continued)

```
  --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 12.0.0 20210707 (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.ton8/bin/gcc
COLLECT_LTO_WRAPPER=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.ton8/libexec/gcc/x86_64-pc-linux-gnu/12.0.0/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.ton8
  --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 12.0.0 20210707 (experimental) (GCC)
------------------------------------------------------------------------------

==============================================================================
 FC  648.exchange2_s(base, peak)
------------------------------------------------------------------------------
Using built-in specs.
COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.ton8/bin/gfortran
COLLECT_LTO_WRAPPER=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.ton8/libexec/gcc/x86_64-pc-linux-gnu/12.0.0/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.ton8
  --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 12.0.0 20210707 (experimental) (GCC)
------------------------------------------------------------------------------
```

Base Unknown Flags

600.perlbench_s: "-fcommonARRAY(0xa553660) "-fcommonARRAY(0xa53ccd8)

602.gcc_s: "-fcommonARRAY(0xa523090) "-fcommonARRAY(0xa574268)

605.mcf_s: "-fcommonARRAY(0xa527780) "-fcommonARRAY(0xa58b0e0)

620.omnetpp_s: "-fcommonARRAY(0xa535b78) "-fcommonARRAY(0xa6b6510)

623.xalancbmk_s: "-fcommonARRAY(0xa574250) "-fcommonARRAY(0xa6b70e0)

625.x264_s: "-fcommonARRAY(0xa532b48) "-fcommonARRAY(0xa6b7858)

631.deepsjeng_s: "-fcommonARRAY(0xa559550) "-fcommonARRAY(0xa6b7c18)

641.leela_s: "-fcommonARRAY(0xa5c2e38) "-fcommonARRAY(0xa6b82f0)

648.exchange2_s: "-fallow-argument-mismatchARRAY(0xa6b6c60) "-fallow-argument-mismatchARRAY(0xa6cbe18)

657.xz_s: "-fcommonARRAY(0xa6b73b0) "-fcommonARRAY(0xa6b6f18)

Peak Unknown Flags

600.perlbench_s: "-fcommonARRAY(0xa553660) "-fcommonARRAY(0xa53ccd8)

602.gcc_s: "-fcommonARRAY(0xa523090) "-fcommonARRAY(0xa574268)

605.mcf_s: "-fcommonARRAY(0xa527780) "-fcommonARRAY(0xa58b0e0)

620.omnetpp_s: "-fcommonARRAY(0xa535b78) "-fcommonARRAY(0xa6b6510)

623.xalancbmk_s: "-fcommonARRAY(0xa574250) "-fcommonARRAY(0xa6b70e0)

625.x264_s: "-fcommonARRAY(0xa532b48) "-fcommonARRAY(0xa6b7858)

631.deepsjeng_s: "-fcommonARRAY(0xa559550) "-fcommonARRAY(0xa6b7c18)

641.leela_s: "-fcommonARRAY(0xa5c2e38) "-fcommonARRAY(0xa6b82f0)

648.exchange2_s: "-fallow-argument-mismatchARRAY(0xa6b6c60) "-fallow-argument-mismatchARRAY(0xa6cbe18)

657.xz_s: "-fcommonARRAY(0xa6b73b0) "-fcommonARRAY(0xa6b6f18)

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Peak Unknown Flags (Continued)

600.perlbench_s: "-fcommonARRAY(0xa6b7cf0) "-fcommonARRAY(0xa6e9040) "-fltoARRAY(0xa6fd410)

602.gcc_s: "-fcommonARRAY(0xa6b9338) "-fcommonARRAY(0xa703b58) "-fltoARRAY(0xa7042d8)

605.mcf_s: "-fcommonARRAY(0xa6dde30) "-fcommonARRAY(0xa6fdf20) "-fltoARRAY(0xa6e8fe0)

620.omnetpp_s: "-fcommonARRAY(0xa6b6110) "-fcommonARRAY(0xa6fd728) "-fltoARRAY(0xa6fdd58)

623.xalancbmk_s: "-fcommonARRAY(0xa6ea998) "-fcommonARRAY(0xa6f9058) "-fltoARRAY(0xa6f37f8)

625.x264_s: "-fcommonARRAY(0xa6f0cb0) "-fcommonARRAY(0xa6f0518) "-fltoARRAY(0xa701530)

631.deepsjeng_s: "-fcommonARRAY(0xa6fd530) "-fcommonARRAY(0xa701b18) "-fltoARRAY(0xa709338)

641.leela_s: "-fcommonARRAY(0xa6fdf50) "-fcommonARRAY(0xa701368) "-fltoARRAY(0xa709e48)

648.exchange2_s: "-fallow-argument-mismatchARRAY(0xa6ef710) "-fallow-argument-mismatchARRAY(0xa704968) "-fltoARRAY(0xa70a980)

657.xz_s: "-fcommonARRAY(0xa6fda88) "-fcommonARRAY(0xa709c80) "-fltoARRAY(0xa70f448)

Base Compiler Invocation

C benchmarks:
gcc

C++ benchmarks:
g++

Fortran benchmarks:
gfortran

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

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

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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
```


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 2021-07-07 09:45:11-0400.
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