

# SPEC® CPU2017 Integer Speed Result

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(Test Sponsor: Red Hat, Inc.)

~~SPECspeed2017\_int\_base = 6.97~~

~~SPECspeed2017\_int\_peak = 8.55~~

CPU2017 License: 0002991

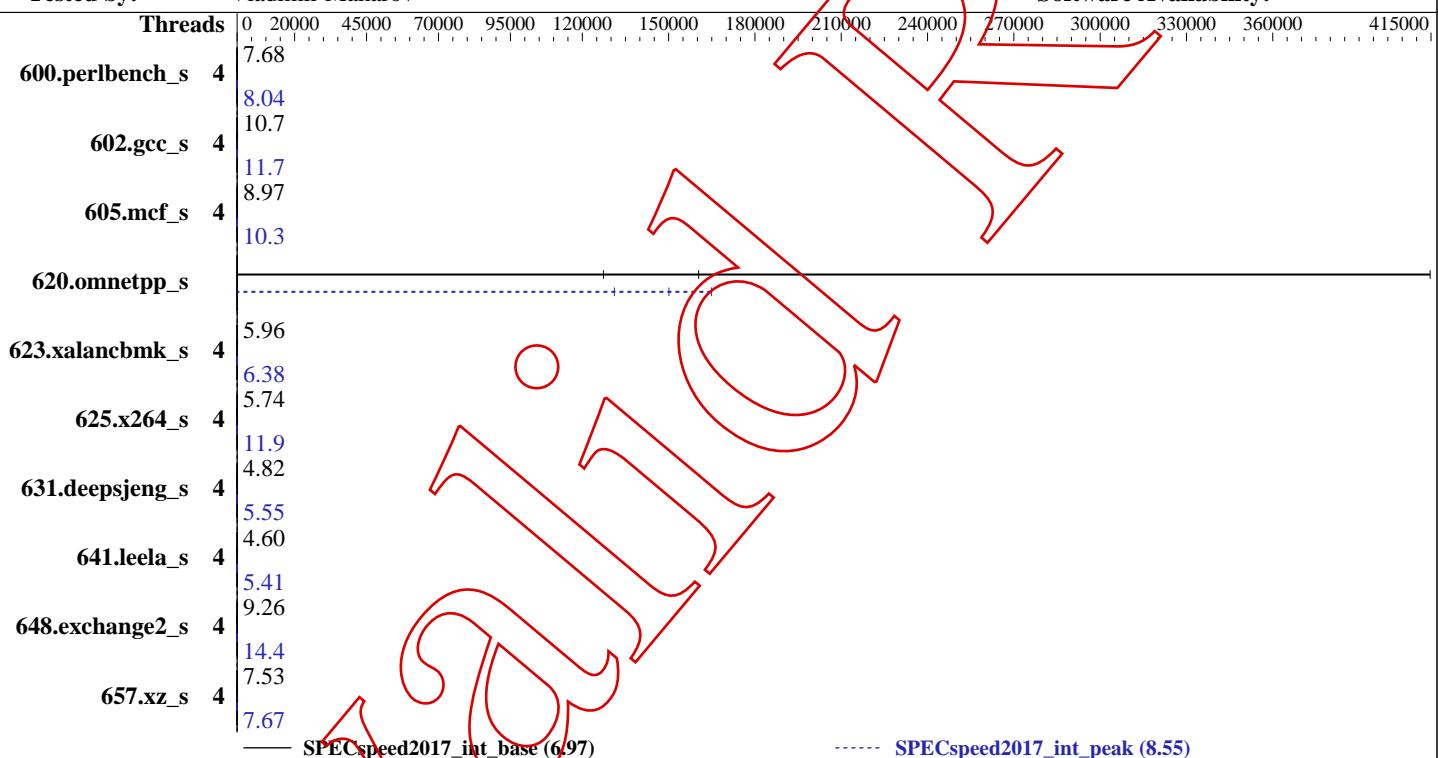
Test Sponsor: Red Hat, Inc.

Tested by: Vladimir Makarov

~~Test Date: Jun-2021~~

~~Hardware Availability: Now~~

~~Software Availability:~~



Hardware		Software	
CPU Name:	Intel(R) Core(TM) i7-8700K CPU @ 3.70GHz	OS:	Linux 4.17.3-200.fc28.x86_64
Max MHz.:	4129.370	Compiler:	4.17.3-200.fc28.x86_64
Nominal:	6 cores, 1 chip, threads/core	Parallel:	gcc version 12.0.0 20210613 (experimental) (GCC)
Enabled:		Firmware:	
Orderable:		File System:	ext4
Cache L1:		System State:	multiuser
L2:	12288 KB	Base Pointers:	64-bit
L3:		Peak Pointers:	64-bit
Other:		Other:	
Memory:	16300620 KB		
Storage:	'N GB (M x N GB nRxn PCn-nnnnnR-n, ECC)'		
Other:	192 GB add more disk info here		

## 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 (base) was not valid; status is RE

Run of 620.omnetpp\_s (peak) 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
600.perlbench_s	4	232	7.64	<u>231</u>	<u>7.68</u>	231	7.68	4	<u>221</u>	<u>8.04</u>	221	8.04
602.gcc_s	4	374	10.6	374	10.7	<u>374</u>	<u>10.7</u>	4	340	11.7	<u>340</u>	<u>11.7</u>
605.mcf_s	4	538	8.77	<u>526</u>	<u>8.97</u>	523	9.02	4	465	10.1	456	10.3
620.omnetpp_s	4	0.00393	0.00	0.0102	0.00	0.0128	0.00	4	0.00989	0.00	0.0109	0.00
623.xalancbmk_s	4	237	5.95	<u>238</u>	<u>5.96</u>	242	5.85	4	<u>222</u>	<u>6.38</u>	225	6.31
625.x264_s	4	306	5.76	311	5.67	<u>307</u>	<u>5.74</u>	4	148	11.9	<u>148</u>	<u>11.9</u>
631.deepsjeng_s	4	<u>297</u>	<u>4.82</u>	297	4.82	298	4.81	4	258	5.54	<u>258</u>	<u>5.55</u>
641.leela_s	4	371	4.60	<u>371</u>	<u>4.60</u>	371	4.60	4	315	5.41	316	5.41
648.exchange2_s	4	<u>317</u>	<u>9.26</u>	316	9.29	318	9.25	4	205	14.4	<u>204</u>	<u>14.4</u>
657.xz_s	4	821	7.63	820	7.54	<u>821</u>	<u>7.53</u>	4	<u>806</u>	<u>7.67</u>	806	7.67
SPECspeed2017_int_base = <u>6.97</u>												
SPECspeed2017_int_peak = <u>8.55</u>												

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 Sun Jun 13 03:41:58 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:               4701.327  
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 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 xtstopology nonstop_tsc cpuid  
aperfmonperf 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 pt  
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.onnetpp_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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~~Software Availability:~~

## 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 20210613 (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 20210613 (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 20210613 (experimental) (GCC)
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~~Jun-2021~~

~~Hardware Availability: Now~~

~~Software Availability:~~

## Base Unknown Flags

600.perlbench\_s: "-fcommonARRAY(0x9c2ee20) "-fcommonARRAY(0x9c40660)

602.gcc\_s: "-fcommonARRAY(0x9c28080) "-fcommonARRAY(0x9c7fd30)

605.mcf\_s: "-fcommonARRAY(0x9c46678) "-fcommonARRAY(0x9c970c8)

620.omnetpp\_s: "-fcommonARRAY(0x9c3e978) "-fcommonARRAY(0x9dc1108)

623.xalancbmk\_s: "-fcommonARRAY(0x9c7fd18) "-fcommonARRAY(0x9dc2510)

625.x264\_s: "-fcommonARRAY(0x9c42400) "-fcommonARRAY(0x9dc2c88)

631.deepsjeng\_s: "-fcommonARRAY(0x9c613f0) "-fcommonARRAY(0x9dc3048)

641.leela\_s: "-fcommonARRAY(0x9ccdb40) "-fcommonARRAY(0x9dc3720)

648.exchange2\_s: "-fallow-argument-mismatchARRAY(0x9dc2090)

"-fallow-argument-mismatchARRAY(0x9d3dcc0)

657.xz\_s: "-fcommonARRAY(0x9dc27e0) "-fcommonARRAY(0x9ded010)

## Peak Unknown Flags

600.perlbench\_s: "-fcommonARRAY(0x9c2ee20) "-fcommonARRAY(0x9c40660)

602.gcc\_s: "-fcommonARRAY(0x9c28080) "-fcommonARRAY(0x9c7fd30)

605.mcf\_s: "-fcommonARRAY(0x9c46678) "-fcommonARRAY(0x9c970c8)

620.omnetpp\_s: "-fcommonARRAY(0x9c3e978) "-fcommonARRAY(0x9dc1108)

623.xalancbmk\_s: "-fcommonARRAY(0x9c7fd18) "-fcommonARRAY(0x9dc2510)

625.x264\_s: "-fcommonARRAY(0x9c42400) "-fcommonARRAY(0x9dc2c88)

631.deepsjeng\_s: "-fcommonARRAY(0x9c613f0) "-fcommonARRAY(0x9dc3048)

641.leela\_s: "-fcommonARRAY(0x9ccdb40) "-fcommonARRAY(0x9dc3720)

648.exchange2\_s: "-fallow-argument-mismatchARRAY(0x9dc2090)

"-fallow-argument-mismatchARRAY(0x9d3dcc0)

657.xz\_s: "-fcommonARRAY(0x9dc27e0) "-fcommonARRAY(0x9ded010)

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~~Hardware Availability: Now~~

~~Software Availability:~~

## Peak Unknown Flags (Continued)

600.perlbench\_s: "-fcommonARRAY(0x9dc3120) "-fcommonARRAY(0x9df46c0)  
"-fltoARRAY(0x9e09998)

602.gcc\_s: "-fcommonARRAY(0x9dc3960) "-fcommonARRAY(0x9e12db8)  
"-fltoARRAY(0x9e13538)

605.mcf\_s: "-fcommonARRAY(0x9de9c30) "-fcommonARRAY(0x9dfe778)  
"-fltoARRAY(0x9df5f70)

620.omnetpp\_s: "-fcommonARRAY(0x9dc0d30) "-fcommonARRAY(0x9e05b38)  
"-fltoARRAY(0x9e03a30)

623.xalancbmk\_s: "-fcommonARRAY(0x9e099f8) "-fcommonARRAY(0x9e09f38)  
"-fltoARRAY(0x9de99d8)

625.x264\_s: "-fcommonARRAY(0x9e03748) "-fcommonARRAY(0x9e03988)  
"-fltoARRAY(0x9e0ce00)

631.deepsjeng\_s: "-fcommonARRAY(0x9e09b18) "-fcommonARRAY(0x9e0d3e8)  
"-fltoARRAY(0x9e0d578)

641.leela\_s: "-fcommonARRAY(0x9e0a4c0) "-fcommonARRAY(0x9e0cc38)  
"-fltoARRAY(0x9e0e088)

648.exchange2\_s: "-fallow-argument-mismatchARRAY(0x9dfc5b8)  
"-fallow-argument-mismatchARRAY(0x9e13bc8)  
"-fltoARRAY(0x9e0ebc0)

657.xz\_s: "-fcommonARRAY(0x9e05940) "-fcommonARRAY(0x9e0dec0)  
"-fltoARRAY(0x9e17718)

## 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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~~Software Availability:~~

## 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](mailto:info@spec.org).

Tested with SPEC CPU2017 v1.0.1 on 2021-06-13 03:41:57-0400.

Report generated on 2021-06-13 09:08:01 by CPU2017 PDF formatter v5748.