

SPEC® CPU2017 Integer Speed Result

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(Test Sponsor: Red Hat, Inc.)

SPECspeed2017_int_base = 6.95

SPECspeed2017_int_peak = 8.51

CPU2017 License: 0002991

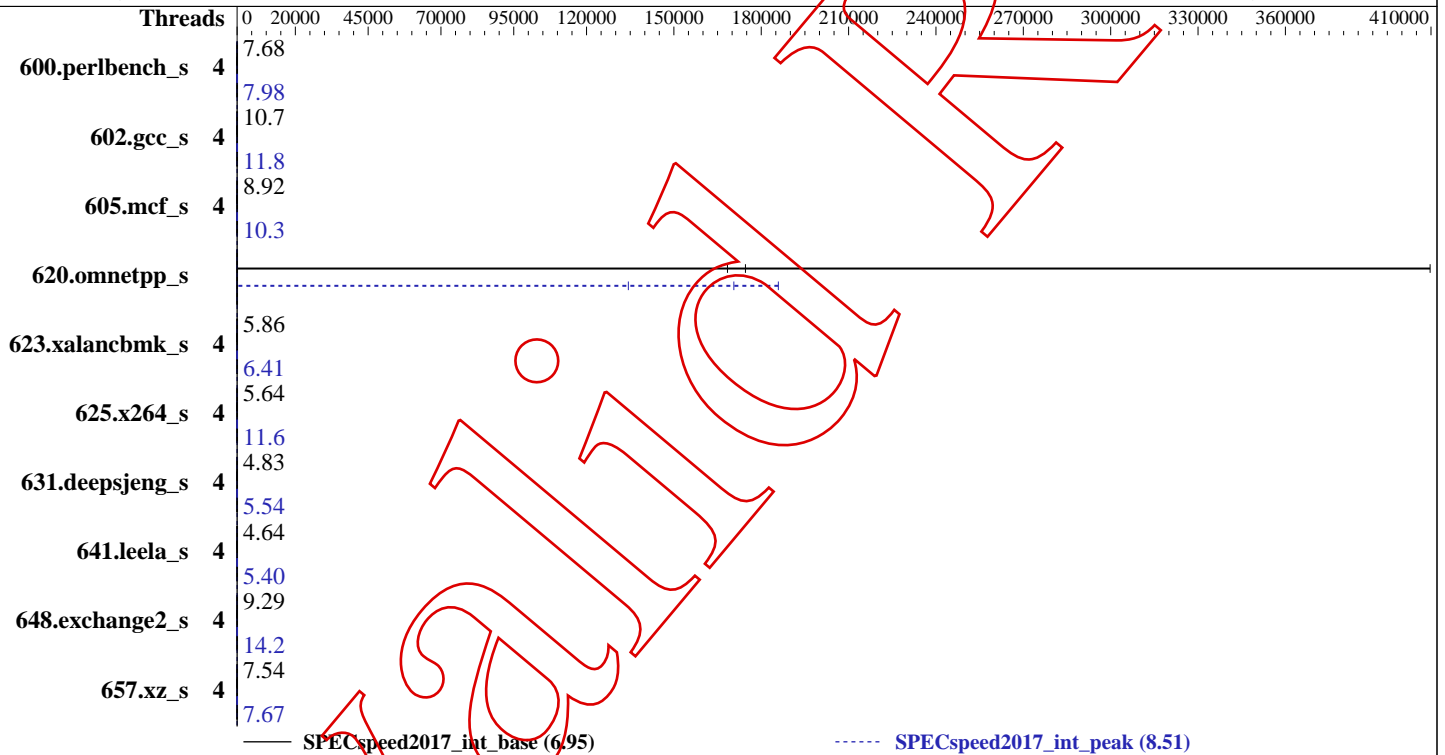
Test Sponsor: Red Hat, Inc.

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: 4702.311
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 20210711 (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	231	7.68	231	7.69	4	221	8.04	224	7.94	222	7.98
602.gcc_s	4	373	10.7	373	10.7	372	10.7	4	338	11.8	339	11.8	341	11.7
605.mcf_s	4	524	9.00	539	8.75	529	8.92	4	459	10.3	460	10.3	471	10.0
620.omnetpp_s	4	0.00398	0.00	0.00934	0.00	0.00968	0.00	4	0.00877	0.00	0.0121	0.00	0.00956	0.00
623.xalancbmk_s	4	244	5.82	234	6.07	242	5.86	4	221	6.41	221	6.40	220	6.44
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	298	4.81	297	4.83	297	4.83	4	258	5.54	259	5.54	259	5.54
641.leela_s	4	368	4.64	368	4.64	368	4.64	4	316	5.40	316	5.39	316	5.40
648.exchange2_s	4	319	9.23	316	9.29	317	9.29	4	206	14.2	206	14.3	206	14.2
657.xz_s	4	821	7.55	820	7.54	820	7.54	4	806	7.67	806	7.67	807	7.66

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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.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 Jul 11 03:45:53 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
```

```
siblings : 6
```

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Platform Notes (Continued)

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:                4700.126
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
aperfperf 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 vmi 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_opp
```

```
/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
Hugepagesize:    2048 kB
```

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Software Availability:

Platform Notes (Continued)

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.smnetpp_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

--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src

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Software Availability:

Compiler Version Notes (Continued)

```
--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 20210711 (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 20210711 (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
```

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Base Unknown Flags

600.perlbench_s: "-fcommonARRAY(0x95c29e8) "-fcommonARRAY(0x95db368)
602.gcc_s: "-fcommonARRAY(0x95bba40) "-fcommonARRAY(0x95f3cc8)
605.mcf_s: "-fcommonARRAY(0x95d3f78) "-fcommonARRAY(0x962ad80)
620.omnetpp_s: "-fcommonARRAY(0x95d5530) "-fcommonARRAY(0x9755708)
623.xalancbmk_s: "-fcommonARRAY(0x9613708) "-fcommonARRAY(0x9756b10)
625.x264_s: "-fcommonARRAY(0x95b9ec0) "-fcommonARRAY(0x9757288)
631.deepsjeng_s: "-fcommonARRAY(0x95f4f98) "-fcommonARRAY(0x9757648)
641.leela_s: "-fcommonARRAY(0x9663120) "-fcommonARRAY(0x9757d20)
648.exchange2_s: "-fallow-argument-mismatchARRAY(0x9756690)
"-fallow-argument-mismatchARRAY(0x96ef038)
657.xz_s: "-fcommonARRAY(0x9756de0) "-fcommonARRAY(0x9784108)

Peak Unknown Flags

600.perlbench_s: "-fcommonARRAY(0x95c29e8) "-fcommonARRAY(0x95db368)
602.gcc_s: "-fcommonARRAY(0x95bba40) "-fcommonARRAY(0x95f3cc8)
605.mcf_s: "-fcommonARRAY(0x95d3f78) "-fcommonARRAY(0x962ad80)
620.omnetpp_s: "-fcommonARRAY(0x95d5530) "-fcommonARRAY(0x9755708)
623.xalancbmk_s: "-fcommonARRAY(0x9613708) "-fcommonARRAY(0x9756b10)
625.x264_s: "-fcommonARRAY(0x95b9ec0) "-fcommonARRAY(0x9757288)
631.deepsjeng_s: "-fcommonARRAY(0x95f4f98) "-fcommonARRAY(0x9757648)
641.leela_s: "-fcommonARRAY(0x9663120) "-fcommonARRAY(0x9757d20)
648.exchange2_s: "-fallow-argument-mismatchARRAY(0x9756690)
"-fallow-argument-mismatchARRAY(0x96ef038)
657.xz_s: "-fcommonARRAY(0x9756de0) "-fcommonARRAY(0x9784108)

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Peak Unknown Flags (Continued)

600.perlbench_s: "-fcommonARRAY(0x9757720) "-fcommonARRAY(0x978a030)
"-fltoARRAY(0x979b5e8)

602.gcc_s: "-fcommonARRAY(0x9758d68) "-fcommonARRAY(0x97967f8)
"-fltoARRAY(0x97a0450)

605.mcf_s: "-fcommonARRAY(0x9783958) "-fcommonARRAY(0x979b3a8)
"-fltoARRAY(0x977d898)

620.omnetpp_s: "-fcommonARRAY(0x9755330) "-fcommonARRAY(0x979b4e0)
"-fltoARRAY(0x97a03f0)

623.xalancbmk_s: "-fcommonARRAY(0x979b870) "-fcommonARRAY(0x979b798)
"-fltoARRAY(0x979d348)

625.x264_s: "-fcommonARRAY(0x979b858) "-fcommonARRAY(0x978bbb0)
"-fltoARRAY(0x97a01c8)

631.deepsjeng_s: "-fcommonARRAY(0x9796af8) "-fcommonARRAY(0x978e2b0)
"-fltoARRAY(0x97a7ca8)

641.leela_s: "-fcommonARRAY(0x979b6d8) "-fcommonARRAY(0x97a0000)
"-fltoARRAY(0x97a87b8)

648.exchange2_s: "-fallow-argument-mismatchARRAY(0x9791df8)
"-fallow-argument-mismatchARRAY(0x979dc18)
"-fltoARRAY(0x97a92f0)

657.xz_s: "-fcommonARRAY(0x979b2a0) "-fcommonARRAY(0x97a85f0)
"-fltoARRAY(0x97addb8)

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.

Tested with SPEC CPU2017 v1.0.1 on 2021-07-11 03:45:52-0400.

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