



SPEC® CPU2017 Integer Speed Result

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Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2174G, 3.80GHz

SPECspeed2017_int_base = 10.4

SPECspeed2017_int_peak = Not Run

CPU2017 License: 19

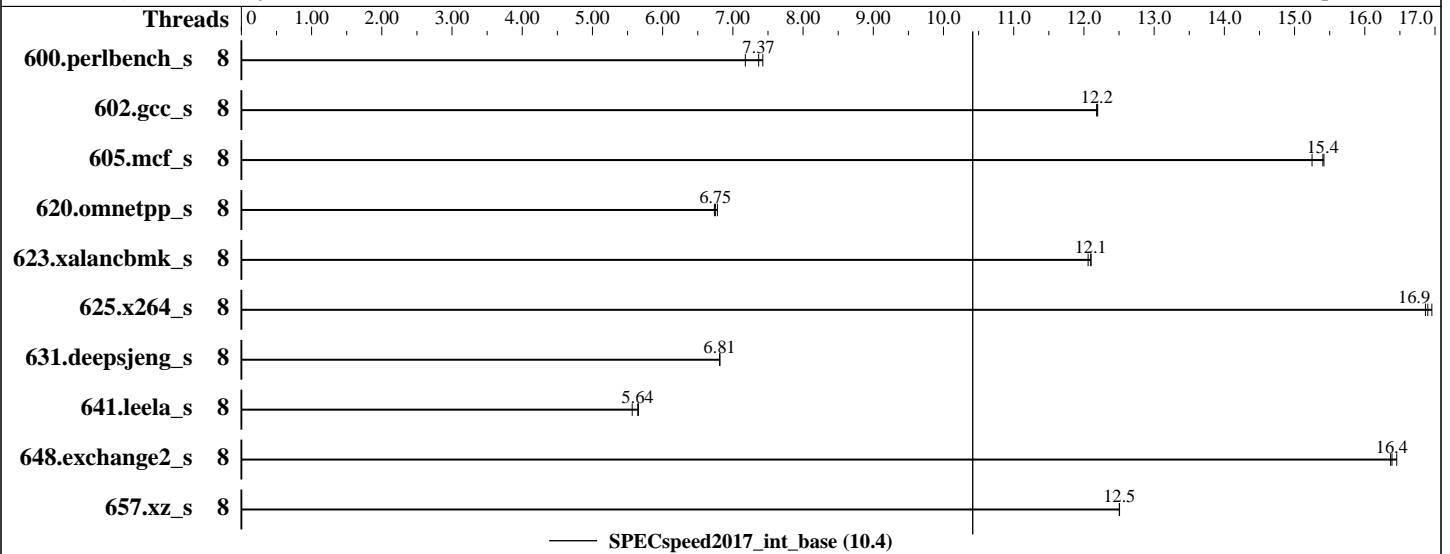
Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Oct-2018

Hardware Availability: Nov-2018

Software Availability: Sep-2018



Hardware

CPU Name: Intel Xeon E-2174G
 Max MHz.: 4700
 Nominal: 3800
 Enabled: 4 cores, 1 chip, 2 threads/core
 Orderable: 1 chip
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 256 KB I+D on chip per core
 L3: 8 MB I+D on chip per chip
 Other: None
 Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)
 Storage: 1 x SATA M.2 SSD, 240 GB
 Other: None

Software

OS: Red Hat Enterprise Linux Server release 7.5 (Maipo)
 3.10.0-862.el7.x86_64
 Compiler: C/C++: Version 19.0.0.117 of Intel C/C++ Compiler for Linux;
 Fortran: Version 19.0.0.117 of Intel Fortran Compiler for Linux
 Parallel: Yes
 Firmware: Fujitsu BIOS Version V5.0.0.13 R1.4.0 for D3673-A1x. Released Nov-2018 tested as V5.0.0.13 R1.0.0 for D3673-A1x Sep-2018
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other: jemalloc memory allocator library V5.0.1



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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 | 8 | 247 | 7.18 | <u>241</u> | <u>7.37</u> | 239 | 7.43 | | | | | | | |
| 602.gcc_s | 8 | 327 | 12.2 | 327 | 12.2 | <u>327</u> | <u>12.2</u> | | | | | | | |
| 605.mcf_s | 8 | 310 | 15.2 | <u>306</u> | <u>15.4</u> | 306 | 15.4 | | | | | | | |
| 620.omnetpp_s | 8 | <u>242</u> | <u>6.75</u> | 241 | 6.78 | 242 | 6.74 | | | | | | | |
| 623.xalancbmk_s | 8 | <u>117</u> | <u>12.1</u> | 118 | 12.1 | 117 | 12.1 | | | | | | | |
| 625.x264_s | 8 | 105 | 16.9 | <u>104</u> | <u>16.9</u> | 104 | 17.0 | | | | | | | |
| 631.deepsjeng_s | 8 | <u>210</u> | <u>6.81</u> | 210 | 6.82 | 210 | 6.81 | | | | | | | |
| 641.leela_s | 8 | 302 | 5.66 | <u>302</u> | <u>5.64</u> | 306 | 5.57 | | | | | | | |
| 648.exchange2_s | 8 | 179 | 16.5 | <u>179</u> | <u>16.4</u> | 180 | 16.4 | | | | | | | |
| 657.xz_s | 8 | 494 | 12.5 | 494 | 12.5 | <u>494</u> | <u>12.5</u> | | | | | | | |

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

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

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

```

KMP_AFFINITY = "granularity=fine,scatter"
OMP_STACKSIZE = "192M"
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-ic19/ic19.0-lib/ia32"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2017-ic19/ic19.0-lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2017-ic19/je5.0.1-32"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/Benchmark/speccpu2017-ic19/je5.0.1-64"

```

Binaries compiled on a system with 1x Intel Xeon E-2186G CPU + 64GB RAM
memory using Red Hat Enterprise Linux Server release 7.5
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3 > /proc/sys/vm/drop_caches
jemalloc: configured and built at default for 32bit (i686) and 64bit (x86_64) targets
jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5
jemalloc: sources available via jemalloc.net

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General Notes (Continued)

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Platform Notes

BIOS configuration:

```
DCU Streamer Prefetcher = Disabled
DDR PowerDown and idle counter = PCODE
CState Pre-Wake = Disabled
Package C-State Un-demotion = Enabled
REFRESH_2X_MODE = 1- Enabled for WARM or HOT
Sysinfo program /home/Benchmark/speccpu2017-ic19/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on localhost.localdomain Tue Oct 30 09:34:35 2018
```

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) Xeon(R) E-2174G CPU @ 3.80GHz
 1 "physical id"s (chips)
 8 "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 : 4
siblings : 8
physical 0: cores 0 1 2 3
```

From lscpu:

```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 8
On-line CPU(s) list: 0-7
Thread(s) per core: 2
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
```

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Platform Notes (Continued)

```

Model name: Intel(R) Xeon(R) E-2174G CPU @ 3.80GHz
Stepping: 10
CPU MHz: 4451.037
CPU max MHz: 4700.0000
CPU min MHz: 800.0000
BogoMIPS: 7584.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node0 CPU(s): 0-7
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
aperfperf eagerfpu 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 epb intel_pt tpr_shadow vnmi
flexpriority ept vpid fsgsbase tsc_adjust bmil hle avx2 smep bmi2 erms invpcid rtm
mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1 ibpb ibrs stibp dtherm ida
arat pln pts hwp hwp_notify hwp_act_window hwp_epp spec_ctrl intel_stibp

```

```

/proc/cpuinfo cache data
cache size : 8192 KB

```

```

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 1 nodes (0)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 65278 MB
node 0 free: 63188 MB
node distances:
node 0
0: 10

```

```

From /proc/meminfo
MemTotal: 65545552 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.5 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"

```

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Platform Notes (Continued)

```
VARIANT_ID="server"
VERSION_ID="7.5"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.5 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.5:ga:server
```

```
uname -a:
Linux localhost.localdomain 3.10.0-862.el7.x86_64 #1 SMP Wed Mar 21 18:14:51 EDT 2018
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Oct 30 09:32
```

```
SPEC is set to: /home/Benchmark/speccpu2017-ic19
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   150G   33G  118G  22% /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.

```
BIOS FUJITSU // American Megatrends Inc. V5.0.0.13 R1.0.0 for D3673-A1x
09/14/2018
```

```
Memory:
4x SK Hynix HMA82GU7CJR8N-VK 16 GB 2 rank 2667
```

(End of data from sysinfo program)

Compiler Version Notes

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

```
icc (ICC) 19.0.0.117 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----
```

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

```
icpc (ICC) 19.0.0.117 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----
```

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Compiler Version Notes (Continued)

=====
FC 648.exchange2_s(base)
=====

ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
=====

Base Compiler Invocation

C benchmarks:

icc -m64 -std=c11

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
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:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

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Base Optimization Flags (Continued)

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.html>
<http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml>
<http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevB.xml>

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

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