



SPEC® CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

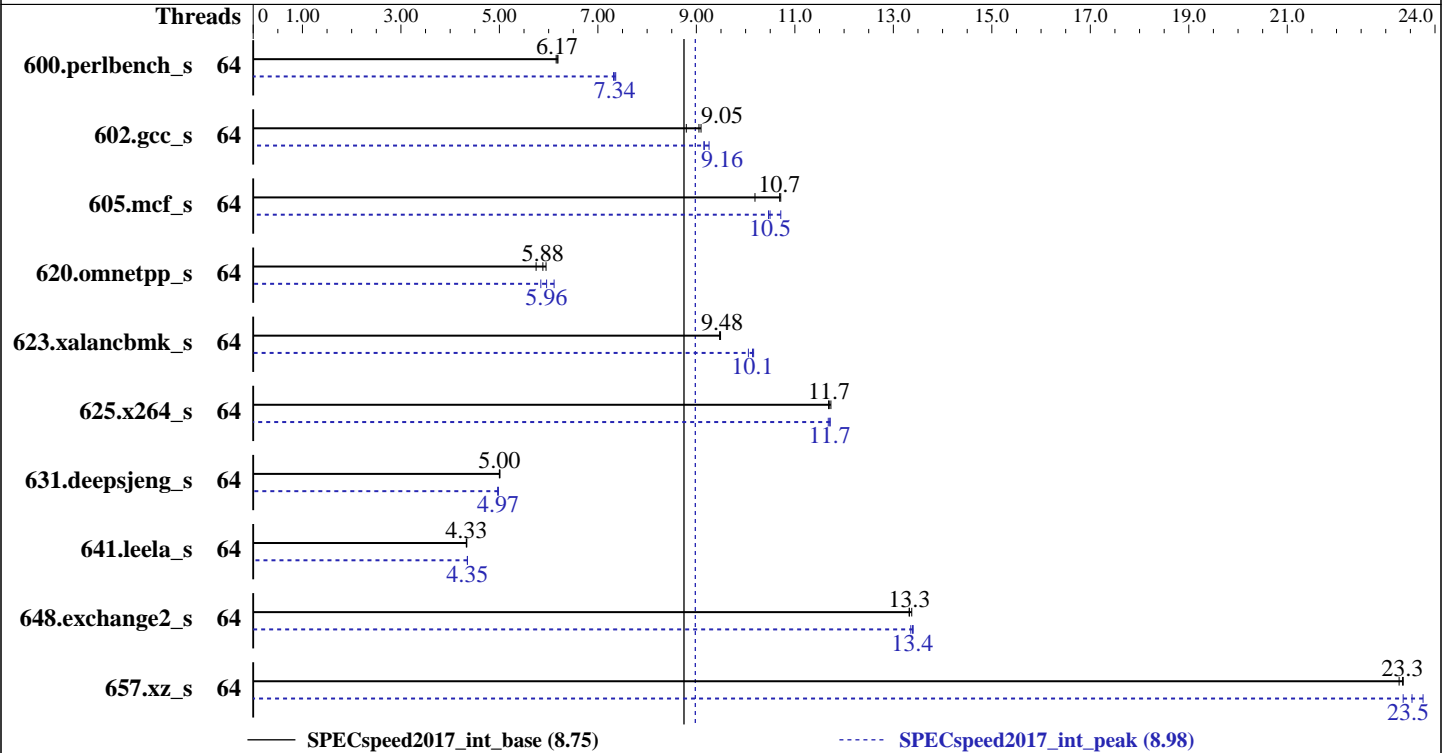
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017



Hardware

CPU Name: Intel Xeon Gold 6130
 Max MHz.: 3700
 Nominal: 2100
 Enabled: 64 cores, 4 chips
 Orderable: 1,2 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 22 MB I+D on chip per chip
 Other: None
 Memory: 768 GB (24 x 32 GB 2Rx8 PC4-2666V-R)
 Storage: 960 GB SAS SSD
 Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP3
 4.4.114-94.11-default
 Compiler: C/C++: Version 18.0.0.128 of Intel C/C++
 Compiler for Linux;
 Fortran: Version 18.0.0.128 of Intel Fortran
 Compiler for Linux
 Parallel: Yes
 Firmware: Version 0.4.0 released Mar-2018
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other: jemalloc memory allocator library V5.0.1



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Apr-2018
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	289	6.15	<u>287</u>	<u>6.17</u>	287	6.19	64	243	7.32	<u>242</u>	<u>7.34</u>	241	7.36
602.gcc_s	64	<u>440</u>	<u>9.05</u>	453	8.80	438	9.09	64	430	9.26	<u>435</u>	<u>9.16</u>	435	9.15
605.mcf_s	64	463	10.2	<u>442</u>	<u>10.7</u>	441	10.7	64	451	10.5	441	10.7	<u>450</u>	<u>10.5</u>
620.omnetpp_s	64	284	5.75	<u>277</u>	<u>5.88</u>	274	5.95	64	279	5.84	<u>274</u>	<u>5.96</u>	267	6.11
623.xalancbmk_s	64	<u>150</u>	<u>9.48</u>	150	9.48	149	9.49	64	<u>140</u>	<u>10.1</u>	141	10.1	139	10.2
625.x264_s	64	<u>151</u>	<u>11.7</u>	151	11.7	150	11.7	64	151	11.7	<u>151</u>	<u>11.7</u>	151	11.7
631.deepsjeng_s	64	<u>286</u>	<u>5.00</u>	286	5.01	287	5.00	64	<u>288</u>	<u>4.97</u>	288	4.98	289	4.97
641.leela_s	64	<u>394</u>	<u>4.33</u>	394	4.33	393	4.34	64	392	4.35	<u>392</u>	<u>4.35</u>	392	4.35
648.exchange2_s	64	221	13.3	<u>221</u>	<u>13.3</u>	220	13.4	64	219	13.4	220	13.4	<u>220</u>	<u>13.4</u>
657.xz_s	64	266	23.3	<u>265</u>	<u>23.3</u>	265	23.4	64	265	23.4	<u>263</u>	<u>23.5</u>	260	23.8

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

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

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"

LD_LIBRARY_PATH = "/root/cpu2017/lib/ia32:/root/cpu2017/lib/intel64:/root/cpu2017/je5.0.1-32:/root/cpu2017/je5.0.1-64"

OMP_STACKSIZE = "192M"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.4

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.

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

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
```



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Platform Notes

BIOS settings:

Sub NUMA Cluster Disabled

Virtualization Technology Disabled

System Profile set to Custom

CPU Performance set to Maximum Performance

C States set to Autonomous

C1E Disabled

Uncore Frequency set to Dynamic

Energy Efficiency Policy set to Performance

Memory Patrol Scrub Disabled

Logical Processor Disabled

CPU Interconnect Bus Link Power Management Disabled

PCI ASPM L1 Link Power Management Disabled

Sysinfo program /root/cpu2017/bin/sysinfo

Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f

running on linux-5y3r Wed Apr 11 08:05:18 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) Gold 6130 CPU @ 2.10GHz

4 "physical id"s (chips)

64 "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 : 16

siblings : 16

physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu:

Architecture: x86_64

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

Byte Order: Little Endian

CPU(s): 64

On-line CPU(s) list: 0-63

Thread(s) per core: 1

Core(s) per socket: 16

Socket(s): 4

NUMA node(s): 4

Vendor ID: GenuineIntel

CPU family: 6

Model: 85

(Continued on next page)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Apr-2018
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Platform Notes (Continued)

```

Model name: Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz
Stepping: 4
CPU MHz: 2095.065
BogoMIPS: 4190.13
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60
NUMA node1 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61
NUMA node2 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62
NUMA node3 CPU(s): 3,7,11,15,19,23,27,31,35,39,43,47,51,55,59,63
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
aperfmpperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg
fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epb invpcid_single pln pts
dtherm intel_pt rsb_ctxsw spec_ctrl retpoline kaiser tpr_shadow vnmi flexpriority
ept vpid fsgsbase tsc_adjust bml hle avx2 smep bmi2 erms invpcid rtm cqm mpx
avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd avx512bw avx512vl xsaveopt
xsavec xgetbv1 cqm_llc cqm_occup_llc pku ospke

```

```

/proc/cpuinfo cache data
cache size : 22528 KB

```

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

```

available: 4 nodes (0-3)
node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60
node 0 size: 192129 MB
node 0 free: 191632 MB
node 1 cpus: 1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61
node 1 size: 193526 MB
node 1 free: 193165 MB
node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46 50 54 58 62
node 2 size: 193526 MB
node 2 free: 193163 MB
node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47 51 55 59 63
node 3 size: 193524 MB
node 3 free: 193177 MB
node distances:
node  0  1  2  3
0:  10  21  21  21
1:  21  10  21  21
2:  21  21  10  21

```

(Continued on next page)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Platform Notes (Continued)

3: 21 21 21 10

From /proc/meminfo

MemTotal: 791250912 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

SUSE Linux Enterprise Server 12 SP3

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

SuSE-release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

PATCHLEVEL = 3

This file is deprecated and will be removed in a future service pack or release.

Please check /etc/os-release for details about this release.

os-release:

NAME="SLES"

VERSION="12-SP3"

VERSION_ID="12.3"

PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"

ID="sles"

ANSI_COLOR="0;32"

CPE_NAME="cpe:/o:suse:sles:12:sp3"

uname -a:

Linux linux-5y3r 4.4.114-94.11-default #1 SMP Thu Feb 1 19:28:26 UTC 2018 (4309ff9)

x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 11 08:03

SPEC is set to: /root/cpu2017

Filesystem Type Size Used Avail Use% Mounted on

/dev/sda3 xfs 882G 17G 866G 2% /

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 Dell Inc. 0.4.0 03/28/2018

Memory:

12x 00AD00B300AD HMA84GR7AFR4N-VK 32 GB 2 rank 2666

12x 00AD063200AD HMA84GR7AFR4N-VK 32 GB 2 rank 2666

24x Not Specified Not Specified

(End of data from sysinfo program)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Compiler Version Notes

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

icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
=====

=====
CC 600.perlbench_s(peak) 602.gcc_s(peak) 605.mcf_s(peak) 657.xz_s(peak)
=====

icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
=====

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

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
=====

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

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
=====

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

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
=====

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

(Continued on next page)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU,
2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

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-AVX512 -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-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc
```

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

Base Other Flags

C benchmarks:

```
-m64 -std=c11
```

C++ benchmarks:

```
-m64
```

(Continued on next page)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU,
2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Base Other Flags (Continued)

Fortran benchmarks:

-m64

Peak Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Peak 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: -D_FILE_OFFSET_BITS=64 -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
```

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-mem-layout-trans=3 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

```
602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-mem-layout-trans=3 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp
```

(Continued on next page)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU, 2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Peak Optimization Flags (Continued)

602.gcc_s (continued):

```
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc
```

605.mcf_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo

```
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3
```

```
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
```

```
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

625.x264_s: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div

```
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
```

```
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

657.xz_s: Same as 602.gcc_s

C++ benchmarks:

620.omnetpp_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo

```
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3
```

```
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
```

```
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

623.xalancbmk_s: -L/opt/intel/compilers_and_libraries_2018/linux/lib/ia32

```
-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
```

```
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3
```

```
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
```

```
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

631.deepsjeng_s: Same as 620.omnetpp_s

641.leela_s: Same as 620.omnetpp_s

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
```

```
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

```
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

Peak Other Flags

C benchmarks:

```
-m64 -std=c11
```

C++ benchmarks (except as noted below):

```
-m64
```

(Continued on next page)



SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX840c (Intel Xeon Gold 6130 CPU,
2.10GHz)

SPECspeed2017_int_base = 8.75

SPECspeed2017_int_peak = 8.98

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Peak Other Flags (Continued)

623.xalancbmk_s: -m32

Fortran benchmarks:

-m64

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-10-19.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge14G-revC.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-10-19.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge14G-revC.xml>

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2017 v1.0.2 on 2018-04-10 20:05:18-0400.

Report generated on 2018-10-31 18:22:14 by CPU2017 PDF formatter v6067.

Originally published on 2018-09-04.