SPEC® CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro
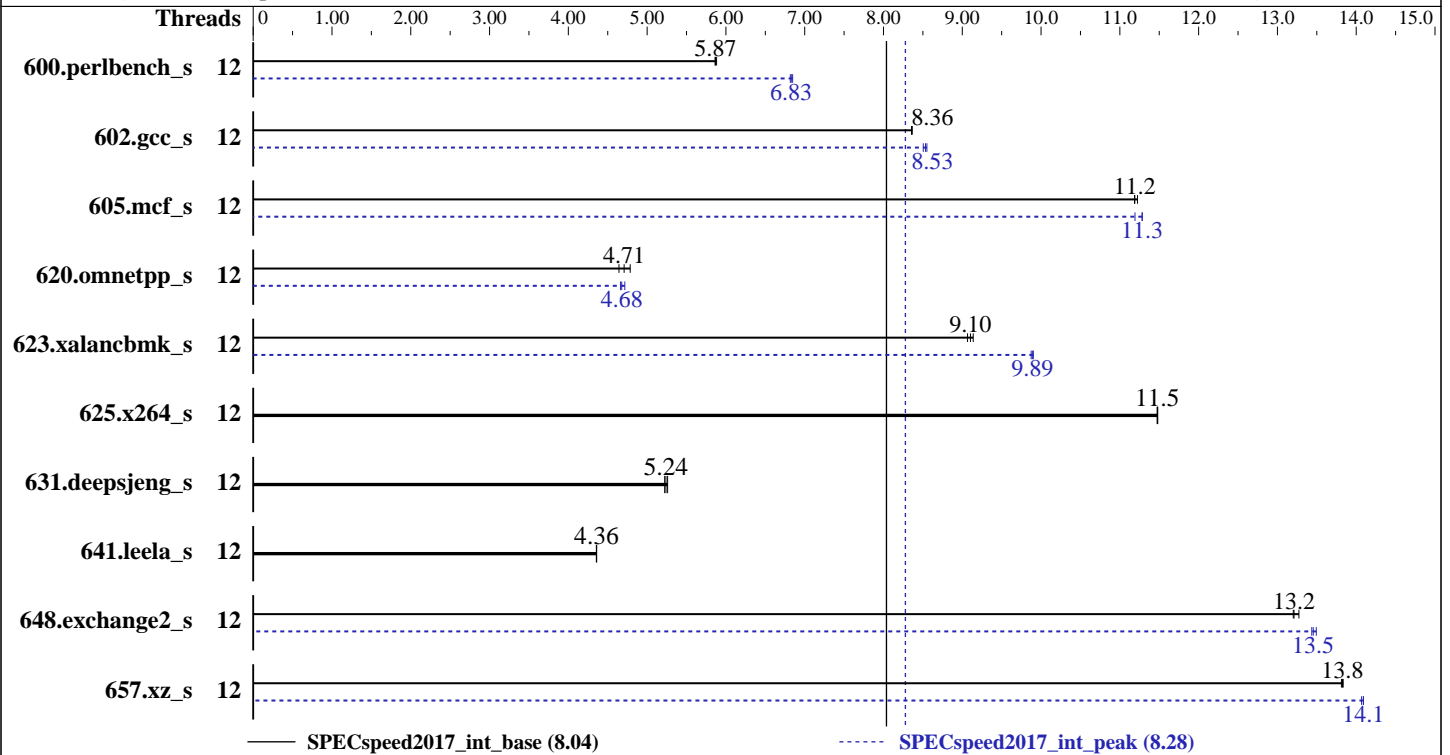
SuperStorage 5049P-E1CR45H (X11SPL-F , Intel Xeon Gold 6126)

$SPECspeed2017\_int\_base = 8.04$

$SPECspeed2017\_int\_peak = 8.28$

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Threads	
600.perlbench_s 12	5.87 / 6.83
602.gcc_s 12	8.36 / 8.53
605.mcf_s 12	11.2 / 11.3
620.omnetpp_s 12	4.71 / 4.68
623.xalancbmk_s 12	9.10 / 9.89
625.x264_s 12	11.5
631.deepsjeng_s 12	5.24
641.leela_s 12	4.36
648.exchange2_s 12	13.2 / 13.5
657.xz_s 12	13.8 / 14.1

SPECspeed2017_int_base (8.04)   **SPECspeed2017_int_peak (8.28)**

Hardware

CPU Name: Intel Xeon Gold 6126
 Max MHz.: 3700
 Nominal: 2600
Enabled: 12 cores, 1 chip
Orderable: 1 chip
Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 19.25 MB I+D on chip per chip
 Other: None
Memory: 192 GB (6 x 32 GB 2Rx4 PC4-2666V-R)
Storage: 1 x 2 TB SATA III, 7200 RPM
Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP3 (x86_64)
 Kernel 4.4.114-94.11-default
Compiler: C/C++: Version 18.0.2.199 of Intel C/C++
 Compiler for Linux;
 Fortran: Version 18.0.2.199 of Intel Fortran
 Compiler for Linux
Parallel: Yes
Firmware: Supermicro BIOS version 2.0b released Feb-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

Standard Performance Evaluation Corporation (info@spec.org)
https://www.spec.org/

SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F , Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176	**Test Date:** Jun-2018
Test Sponsor: Supermicro	**Hardware Availability:** Jul-2017
Tested by: Supermicro	**Software Availability:** Mar-2018

Results Table

Benchmark	**Base**							**Peak**						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	12	303	5.86	302	5.88	**303**	**5.87**	12	260	6.82	259	6.85	**260**	**6.83**
602.gcc_s	12	476	8.36	477	8.36	**476**	**8.36**	12	466	8.55	**467**	**8.53**	468	8.51
605.mcf_s	12	422	11.2	**422**	**11.2**	421	11.2	12	422	11.2	418	11.3	**418**	**11.3**
620.omnetpp_s	12	351	4.64	**346**	**4.71**	341	4.79	12	**349**	**4.68**	346	4.72	350	4.66
623.xalancbmk_s	12	**156**	**9.10**	155	9.14	156	9.07	12	**143**	**9.89**	143	9.90	144	9.87
625.x264_s	12	154	11.5	**154**	**11.5**	154	11.5	12	154	11.5	**154**	**11.5**	154	11.5
631.deepsjeng_s	12	272	5.26	**274**	**5.24**	274	5.22	12	272	5.26	**274**	**5.24**	274	5.22
641.leela_s	12	391	4.36	392	4.36	**391**	**4.36**	12	391	4.36	392	4.36	**391**	**4.36**
648.exchange2_s	12	**223**	**13.2**	222	13.3	223	13.2	12	219	13.4	**219**	**13.5**	218	13.5
657.xz_s	12	447	13.8	448	13.8	**447**	**13.8**	12	439	14.1	**439**	**14.1**	439	14.1
SPECspeed2017_int_base =			**8.04**										
SPECspeed2017_int_peak =			**8.28**										

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 = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"
OMP_STACKSIZE = "192M"

 Binaries compiled on a system with 1x Intel Core i7-6700K CPU + 32GB RAM
 memory using Redhat Enterprise Linux 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: jemalloc, a general purpose malloc implementation;
 jemalloc: built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5;
 jemalloc: sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases;

 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.

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F ,
Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Platform Notes

```
BIOS Settings:
Hyper-Threading = Disable
LLC prefetch = Enable
Power Technology = Custom
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Maximum Performance
Hardware P-state = Out of Band Mode
XPT Prefetch = Enable
Stale AtoS = Enable
LLC dead line alloc = Disable
SDDC Plus One = Disable
ADDDC Sparing = Disable
Patrol Scrub = Disable
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on linux-9m9c Fri Jun 15 13:27:45 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 6126 CPU @ 2.60GHz
      1  "physical id"s (chips)
      12 "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 : 12
      siblings  : 12
      physical 0: cores 1 2 3 4 5 6 8 9 10 11 13 14

From lscpu:
      Architecture:          x86_64
      CPU op-mode(s):        32-bit, 64-bit
      Byte Order:            Little Endian
      CPU(s):                12
      On-line CPU(s) list:   0-11
      Thread(s) per core:    1
      Core(s) per socket:    12
      Socket(s):             1
      NUMA node(s):          2
      Vendor ID:             GenuineIntel
      CPU family:            6
      Model:                 85
      Model name:            Intel(R) Xeon(R) Gold 6126 CPU @ 2.60GHz
      Stepping:              4
      CPU MHz:               2600.020
```

(Continued on next page)

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F ,
Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Jun-2018

Hardware Availability: Jul-2017

Software Availability: Mar-2018

Platform Notes (Continued)

```
     BogoMIPS:              5200.04
     Virtualization:        VT-x
     L1d cache:             32K
     L1i cache:             32K
     L2 cache:              1024K
     L3 cache:              19712K
     NUMA node0 CPU(s):     0-2,6-8
     NUMA node1 CPU(s):     3-5,9-11
     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
   aperfmperf 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 hwp_epp intel_pt rsb_ctxsw spec_ctrl retpoline kaiser tpr_shadow vnmi
   flexpriority ept vpid fsgsbase tsc_adjust bmi1 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 : 19712 KB

 From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
 physical chip.
   available: 2 nodes (0-1)
   node 0 cpus: 0 1 2 6 7 8
   node 0 size: 95258 MB
   node 0 free: 94902 MB
   node 1 cpus: 3 4 5 9 10 11
   node 1 size: 96628 MB
   node 1 free: 96261 MB
   node distances:
   node   0   1
     0:  10  11
     1:  11  10

 From /proc/meminfo
    MemTotal:       196491856 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)
```

(Continued on next page)

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F ,
Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176   **Test Date:**   Jun-2018
Test Sponsor: Supermicro   **Hardware Availability:** Jul-2017
Tested by: Supermicro   **Software Availability:** Mar-2018

Platform Notes (Continued)

```
        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-9m9c 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 Jun 15 13:25

  SPEC is set to: /home/cpu2017
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sda4       xfs   1.8T   25G  1.8T   2% /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 American Megatrends Inc. 2.0b 02/26/2018
    Memory:
     2x NO DIMM NO DIMM
     6x Samsung M393A4K40CB2-CTD 32 GB 2 rank 2666

  (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,
       peak) 657.xz_s(base)
------------------------------------------------------------------------------
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


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

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F ,
Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Compiler Version Notes (Continued)

```
--------------------------------------------------------------------------
icc (ICC) 18.0.2 20180210
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) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------


==========================================================================
CXXC 620.omnetpp_s(peak) 623.xalancbmk_s(peak) 631.deepsjeng_s(peak)
     641.leela_s(peak)
--------------------------------------------------------------------------
icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------


==========================================================================
 FC  648.exchange2_s(base, peak)
--------------------------------------------------------------------------
ifort (IFORT) 18.0.2 20180210
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`

(Continued on next page)

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F ,
Intel Xeon Gold 6126)

$SPECspeed2017\_int\_base =$ 8.04

$SPECspeed2017\_int\_peak =$ 8.28

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Jun-2018
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Base Portability Flags (Continued)

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

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks (except as noted below):
icpc -m64

623.xalancbmk_s: icpc -m32 -L/home/prasadj/specdev/IC18u2_Internal/lin_18_0_20180210/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F , Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Jun-2018

Hardware Availability: Jul-2017

Software Availability: Mar-2018

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

625.x264_s: `basepeak = yes`

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-prefetch`
`-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp`
`-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc`

(Continued on next page)

SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro

SuperStorage 5049P-E1CR45H (X11SPL-F , Intel Xeon Gold 6126)

SPECspeed2017_int_base = 8.04

SPECspeed2017_int_peak = 8.28

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Jun-2018

Hardware Availability: Jul-2017

Software Availability: Mar-2018

Peak Optimization Flags (Continued)

623.xalancbmk_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-32/lib -ljemalloc

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs
-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/Supermicro-Platform-Settings-V1.2-SKL-revD.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/Supermicro-Platform-Settings-V1.2-SKL-revD.xml

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 2018-06-15 13:27:44-0400.
Report generated on 2018-10-31 18:52:03 by CPU2017 PDF formatter v6067.
Originally published on 2018-07-10.