



# SPEC® CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

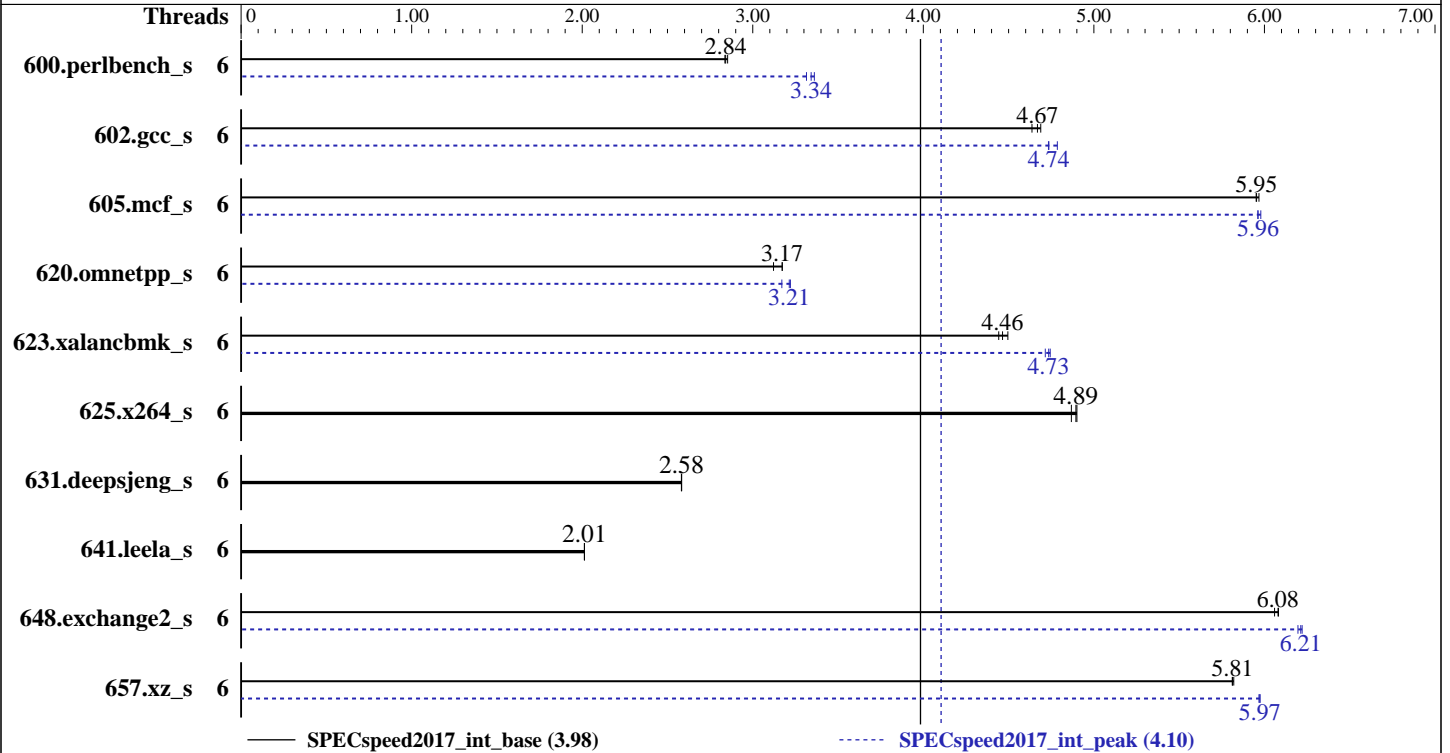
SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

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



### Hardware

CPU Name: Intel Xeon Bronze 3104  
Max MHz.: 1700  
Nominal: 1700  
Enabled: 6 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: 8.25 MB I+D on chip per chip  
Other: None  
Memory: 192 GB (6 x 32 GB 2Rx4 PC4-2666V-R, running at 2133)  
Storage: 1 x 200 GB SATA III SSD  
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 2.1 released Jun-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

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

Test Date: Aug-2018  
Hardware Availability: Jul-2017  
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	6	626	2.84	<b>625</b>	<b>2.84</b>	622	2.85	6	<b>531</b>	<b>3.34</b>	528	3.36	535	3.31
602.gcc_s	6	<b>853</b>	<b>4.67</b>	849	4.69	859	4.64	6	<b>841</b>	<b>4.74</b>	841	4.73	832	4.79
605.mcf_s	6	793	5.95	<b>793</b>	<b>5.95</b>	791	5.97	6	792	5.96	<b>792</b>	<b>5.96</b>	790	5.98
620.omnetpp_s	6	514	3.17	522	3.12	<b>514</b>	<b>3.17</b>	6	514	3.17	<b>507</b>	<b>3.21</b>	506	3.22
623.xalancbmk_s	6	<b>317</b>	<b>4.46</b>	319	4.44	315	4.50	6	301	4.72	<b>299</b>	<b>4.73</b>	299	4.74
625.x264_s	6	<b>360</b>	<b>4.89</b>	362	4.87	360	4.90	6	<b>360</b>	<b>4.89</b>	362	4.87	360	4.90
631.deepsjeng_s	6	555	2.58	<b>555</b>	<b>2.58</b>	555	2.58	6	555	2.58	<b>555</b>	<b>2.58</b>	555	2.58
641.leela_s	6	<b>847</b>	<b>2.01</b>	847	2.01	848	2.01	6	<b>847</b>	<b>2.01</b>	847	2.01	848	2.01
648.exchange2_s	6	483	6.08	<b>484</b>	<b>6.08</b>	485	6.06	6	473	6.22	<b>473</b>	<b>6.21</b>	474	6.20
657.xz_s	6	1062	5.82	<b>1064</b>	<b>5.81</b>	1064	5.81	6	1036	5.97	<b>1035</b>	<b>5.97</b>	1035	5.97

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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
```

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, a general purpose malloc implementation

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>



# SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

**Test Date:** Aug-2018  
**Hardware Availability:** Jul-2017  
**Software Availability:** Mar-2018

## Platform Notes

### BIOS Settings:

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: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9  
running on linux-cyyj Sat Aug 25 17:58:53 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) Bronze 3104 CPU @ 1.70GHz
 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
  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:                  85
Model name:             Intel(R) Xeon(R) Bronze 3104 CPU @ 1.70GHz
Stepping:               4
CPU MHz:                1000.000
CPU max MHz:           1700.0000
```

(Continued on next page)



# SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

**Test Date:** Aug-2018  
**Hardware Availability:** Jul-2017  
**Software Availability:** Mar-2018

### Platform Notes (Continued)

CPU min MHz: 800.0000  
BogoMIPS: 3400.00  
Virtualization: VT-x  
L1d cache: 32K  
L1i cache: 32K  
L2 cache: 1024K  
L3 cache: 8448K  
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 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 arat epb invpcid\_single pln pts dtherm 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 : 8448 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
node 0 size: 192079 MB
node 0 free: 177370 MB
node distances:
node 0
0: 10
```

```
From /proc/meminfo
MemTotal: 196689692 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
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"
```

(Continued on next page)



# SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

**Test Date:** Aug-2018  
**Hardware Availability:** Jul-2017  
**Software Availability:** Mar-2018

### Platform Notes (Continued)

```
VERSION_ID="12.3"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="/o:suse:sles:12:sp3"
```

```
uname -a:
Linux linux-cyyj 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
```

Kernel self-reported vulnerability status:

```
CVE-2017-5754 (Meltdown): Mitigation: PTI
CVE-2017-5753 (Spectre variant 1): Mitigation: Barriers
CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS+IBPB
```

```
run-level 3 Aug 24 20:14
```

```
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        xfs   145G   16G  129G  11% /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. 2.1 06/14/2018
Memory:
2x NO DIMM NO DIMM
6x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666, configured at 2133
```

(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)  
-----
```

(Continued on next page)



# SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

Test Date: Aug-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  
605.mcf\_s: -DSPEC\_LP64

(Continued on next page)



# SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

**Test Date:** Aug-2018  
**Hardware Availability:** Jul-2017  
**Software Availability:** Mar-2018

## Base Portability Flags (Continued)

```
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
```



# SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

**Test Date:** Aug-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

SuperServer 5019P-MT (X11SPi-TF , Intel Xeon Bronze 3104)

SPECspeed2017\_int\_base = 3.98

SPECspeed2017\_int\_peak = 4.10

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

**Test Date:** Aug-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>

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](mailto:info@spec.org).

Tested with SPEC CPU2017 v1.0.5 on 2018-08-25 05:58:52-0400.  
Report generated on 2018-10-31 18:39:19 by CPU2017 PDF formatter v6067.  
Originally published on 2018-09-18.