



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

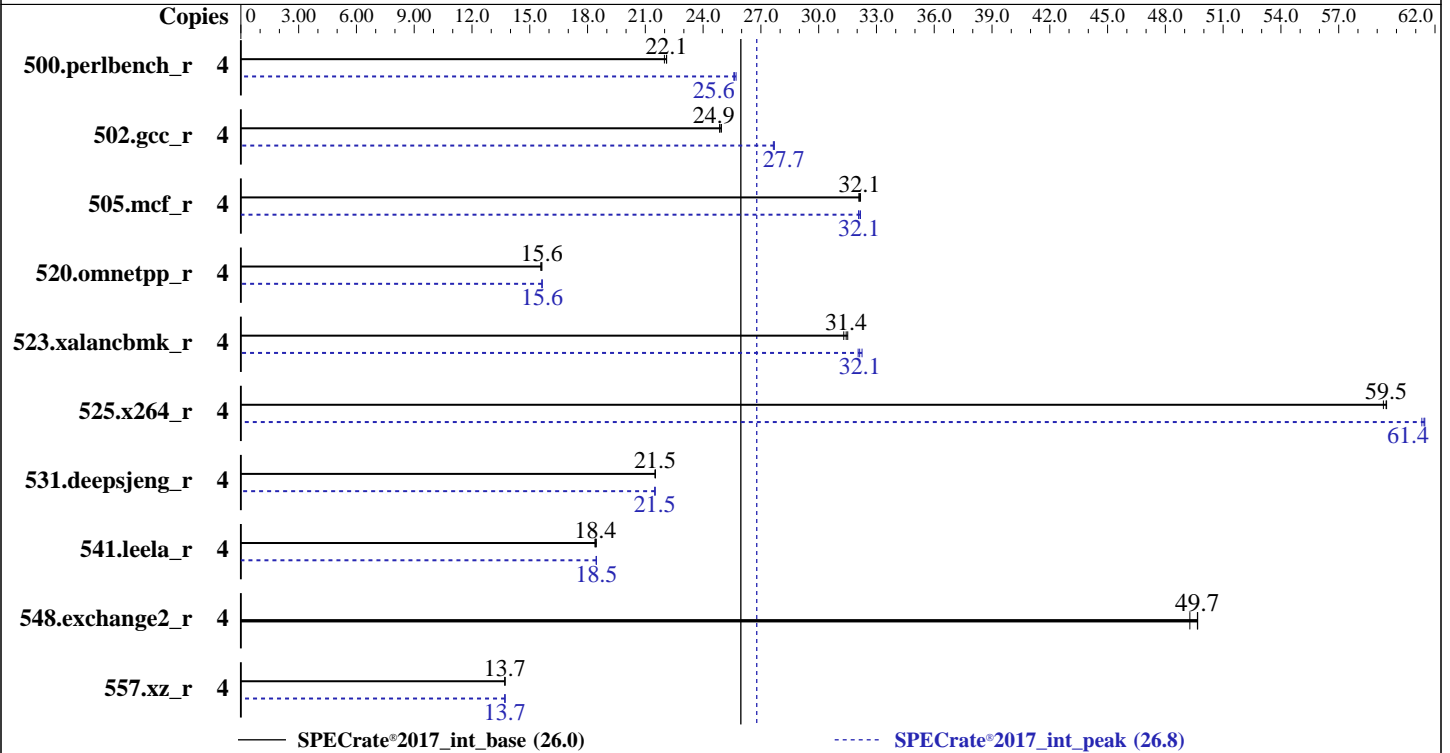
SuperServer 5019C-WR (X11SCW-F , Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

Test Date: Sep-2019  
Hardware Availability: Nov-2018  
Software Availability: Nov-2018



### Hardware

CPU Name: Intel Core i3-8350K  
Max MHz: 4000  
Nominal: 4000  
Enabled: 4 cores, 1 chip  
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, running at 2400)  
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 19.0.1.144 of Intel C/C++ Compiler for Linux;  
Fortran: Version 19.0.1.144 of Intel Fortran Compiler for Linux  
Parallel: No  
Firmware: Version 1.0b released May-2019  
File System: xfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other: jemalloc memory allocator V5.0.1  
Power Management: --



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

Test Date: Sep-2019  
Hardware Availability: Nov-2018  
Software Availability: Nov-2018

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	4	<b>288</b>	<b>22.1</b>	288	22.1	290	22.0	4	249	25.6	248	25.7	<b>248</b>	<b>25.6</b>
502.gcc_r	4	228	24.9	227	25.0	<b>228</b>	<b>24.9</b>	4	205	27.7	<b>205</b>	<b>27.7</b>	205	27.6
505.mcf_r	4	201	32.1	201	32.2	<b>201</b>	<b>32.1</b>	4	202	32.1	201	32.2	<b>201</b>	<b>32.1</b>
520.omnetpp_r	4	<b>336</b>	<b>15.6</b>	336	15.6	337	15.6	4	336	15.6	<b>336</b>	<b>15.6</b>	336	15.6
523.xalancbmk_r	4	135	31.3	134	31.5	<b>134</b>	<b>31.4</b>	4	131	32.3	132	32.0	<b>131</b>	<b>32.1</b>
525.x264_r	4	<b>118</b>	<b>59.5</b>	118	59.5	118	59.3	4	114	61.3	<b>114</b>	<b>61.4</b>	114	61.5
531.deepsjeng_r	4	<b>213</b>	<b>21.5</b>	213	21.5	213	21.5	4	<b>213</b>	<b>21.5</b>	213	21.5	213	21.5
541.leela_r	4	360	18.4	359	18.5	<b>360</b>	<b>18.4</b>	4	<b>359</b>	<b>18.5</b>	359	18.4	359	18.5
548.exchange2_r	4	211	49.7	<b>211</b>	<b>49.7</b>	213	49.3	4	211	49.7	<b>211</b>	<b>49.7</b>	213	49.3
557.xz_r	4	315	13.7	<b>315</b>	<b>13.7</b>	315	13.7	4	<b>315</b>	<b>13.7</b>	315	13.7	315	13.7

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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:

LD\_LIBRARY\_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"

Binaries compiled on a system with 1x Intel Core i9-7900X 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.

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

### General Notes (Continued)

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>

### Platform Notes

sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9  
running on linux-65nv Wed Sep 25 12:46:19 2019

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) i3-8350K CPU @ 4.00GHz
 1 "physical id"s (chips)
 4 "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 : 4
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): 4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Core(TM) i3-8350K CPU @ 4.00GHz
Stepping: 11
CPU MHz: 4000.054
CPU max MHz: 4000.0000
CPU min MHz: 800.0000
BogoMIPS: 8015.12
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F , Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

### Platform Notes (Continued)

```

L2 cache:                256K
L3 cache:                8192K
NUMA node0 CPU(s):      0-3
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 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 ida arat epb invpcid_single pln pts dtherm
hwp hwp_notify hwp_act_window hwp_epp intel_pt rsb_ctxsw spec_ctrl retpoline kaiser
tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms
invpcid mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1

```

```

/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
node 0 size: 64332 MB
node 0 free: 63598 MB
node distances:
node    0
0:     10

```

```

From /proc/meminfo
MemTotal:        65876956 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"
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"

```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

### Platform Notes (Continued)

```
uname -a:
Linux linux-65nv 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 Sep 25 11:37
```

```
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   145G   38G  108G  26% /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. 1.0b 05/16/2019
Memory:
4x Micron 18ADF2G72AZ-2G6H1R 16 GB 2 rank 2667, configured at 2400
```

(End of data from sysinfo program)

### Compiler Version Notes

```
=====
C          | 502.gcc_r(peak)
```

```
-----
Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```
=====
C          | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
          | 525.x264_r(base, peak) 557.xz_r(base, peak)
```

```
-----
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

### Compiler Version Notes (Continued)

C | 502.gcc\_r(peak)

-----  
Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
525.x264\_r(base, peak) 557.xz\_r(base, peak)

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 523.xalanbmk\_r(peak)  
-----

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalanbmk\_r(base)  
531.deepsjeng\_r(base, peak) 541.leela\_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 523.xalanbmk\_r(peak)  
-----

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.  
-----

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalanbmk\_r(base)  
531.deepsjeng\_r(base, peak) 541.leela\_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.1.144 Build 20181018

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F , Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

### Compiler Version Notes (Continued)

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

-----  
Fortran | 548.exchange2\_r(base, peak)  
-----

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.1.144 Build 20181018

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

500.perlbench\_r: -DSPEC\_LP64 -DSPEC\_LINUX\_X64  
502.gcc\_r: -DSPEC\_LP64  
505.mcf\_r: -DSPEC\_LP64  
520.omnetpp\_r: -DSPEC\_LP64  
523.xalancbmk\_r: -DSPEC\_LP64 -DSPEC\_LINUX  
525.x264\_r: -DSPEC\_LP64  
531.deepsjeng\_r: -DSPEC\_LP64  
541.leela\_r: -DSPEC\_LP64  
548.exchange2\_r: -DSPEC\_LP64  
557.xz\_r: -DSPEC\_LP64

### Base Optimization Flags

C benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F , Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

## Base Optimization Flags (Continued)

C benchmarks (continued):

-lqkmalloc

C++ benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div

-qopt-mem-layout-trans=4

-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64

-lqkmalloc

Fortran benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div

-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte

-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64

-lqkmalloc

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64 -std=c11

502.gcc\_r: icc -m32 -std=c11 -L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/ia32\_lin

C++ benchmarks (except as noted below):

icpc -m64

523.xalancbk\_r: icpc -m32 -L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/ia32\_lin

Fortran benchmarks:

ifort -m64

## Peak Portability Flags

500.perlbench\_r: -DSPEC\_LP64 -DSPEC\_LINUX\_X64

502.gcc\_r: -D\_FILE\_OFFSET\_BITS=64

505.mcf\_r: -DSPEC\_LP64

520.omnetpp\_r: -DSPEC\_LP64

523.xalancbk\_r: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_LINUX

525.x264\_r: -DSPEC\_LP64

531.deepsjeng\_r: -DSPEC\_LP64

541.leela\_r: -DSPEC\_LP64

548.exchange2\_r: -DSPEC\_LP64

(Continued on next page)





# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

## Peak Portability Flags (Continued)

557.xz\_r: -DSPEC\_LP64

## Peak Optimization Flags

C benchmarks:

500.perlbench\_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-fno-strict-overflow  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc

502.gcc\_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-L/usr/local/je5.0.1-32/lib -ljemalloc

505.mcf\_r: -w1,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc

525.x264\_r: -w1,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4 -fno-alias  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc

557.xz\_r: Same as 505.mcf\_r

C++ benchmarks:

520.omnetpp\_r: -w1,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.1.144/linux/compiler/lib/intel64  
-lqkmalloc

523.xalancbmk\_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-L/usr/local/je5.0.1-32/lib -ljemalloc

531.deepsjeng\_r: Same as 520.omnetpp\_r

541.leela\_r: Same as 520.omnetpp\_r

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019C-WR (X11SCW-F , Intel Core i3-8350K)

SPECrate®2017\_int\_base = 26.0

SPECrate®2017\_int\_peak = 26.8

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

**Test Date:** Sep-2019  
**Hardware Availability:** Nov-2018  
**Software Availability:** Nov-2018

## Peak Optimization Flags (Continued)

Fortran benchmarks:

548.exchange2\_r: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.html>  
<http://www.spec.org/cpu2017/flags/Default-Platform-Flags.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.xml>  
<http://www.spec.org/cpu2017/flags/Default-Platform-Flags.xml>

SPEC CPU and SPECrate are registered trademarks 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 CPU®2017 v1.0.5 on 2019-09-25 00:46:18-0400.  
Report generated on 2019-10-15 14:43:27 by CPU2017 PDF formatter v6255.  
Originally published on 2019-10-15.