



# SPEC® CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

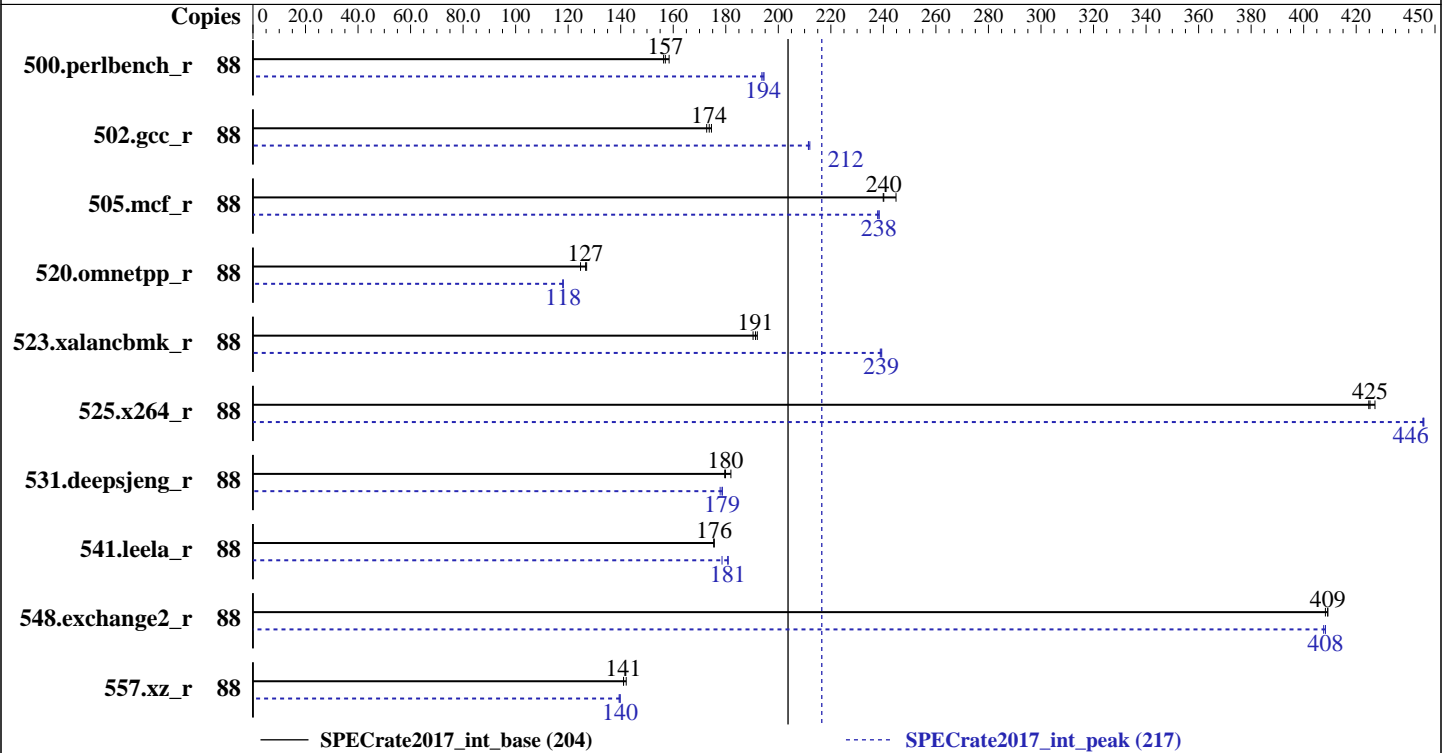
SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

Test Date: Apr-2018  
Hardware Availability: Feb-2018  
Software Availability: Feb-2018



### Hardware

CPU Name: Intel Xeon Gold 6152  
 Max MHz.: 3700  
 Nominal: 2100  
 Enabled: 44 cores, 2 chips, 2 threads/core  
 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: 30.25 MB I+D on chip per chip  
 Other: None  
 Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R)  
 Storage: 1.5 TB SATA 3 SSD  
 Other: None

### Software

OS: SUSE Linux Enterprise Server 12 SP2  
 4.4.114-92.64-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: No  
 Firmware: Supermicro BIOS version 2.0b released Feb-2018  
 File System: xfs  
 System State: Run level 5 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other: jemalloc: jemalloc memory allocator library V5.0.1



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

Test Date: Apr-2018  
Hardware Availability: Feb-2018  
Software Availability: Feb-2018

## Results Table

| Benchmark       | Base   |         |       |            |            |            |            | Peak   |            |            |            |            |            |            |
|-----------------|--------|---------|-------|------------|------------|------------|------------|--------|------------|------------|------------|------------|------------|------------|
|                 | Copies | Seconds | Ratio | Seconds    | Ratio      | Seconds    | Ratio      | Copies | Seconds    | Ratio      | Seconds    | Ratio      | Seconds    | Ratio      |
| 500.perlbench_r | 88     | 884     | 158   | <b>892</b> | <b>157</b> | 896        | 156        | 88     | 720        | 195        | 723        | 194        | <b>721</b> | <b>194</b> |
| 502.gcc_r       | 88     | 714     | 175   | <b>717</b> | <b>174</b> | 721        | 173        | 88     | 589        | 211        | <b>589</b> | <b>212</b> | 588        | 212        |
| 505.mcf_r       | 88     | 581     | 245   | <b>592</b> | <b>240</b> | 593        | 240        | 88     | <b>597</b> | <b>238</b> | 598        | 238        | 597        | 238        |
| 520.omnetpp_r   | 88     | 909     | 127   | <b>912</b> | <b>127</b> | 926        | 125        | 88     | <b>978</b> | <b>118</b> | 978        | 118        | 978        | 118        |
| 523.xalancbmk_r | 88     | 484     | 192   | 488        | 190        | <b>486</b> | <b>191</b> | 88     | 388        | 239        | <b>389</b> | <b>239</b> | 389        | 239        |
| 525.x264_r      | 88     | 361     | 427   | 363        | 425        | <b>362</b> | <b>425</b> | 88     | <b>346</b> | <b>446</b> | 346        | 445        | 346        | 446        |
| 531.deepsjeng_r | 88     | 554     | 182   | <b>561</b> | <b>180</b> | 562        | 180        | 88     | 567        | 178        | <b>565</b> | <b>179</b> | 564        | 179        |
| 541.leela_r     | 88     | 830     | 176   | 830        | 176        | <b>830</b> | <b>176</b> | 88     | 805        | 181        | 816        | 179        | <b>806</b> | <b>181</b> |
| 548.exchange2_r | 88     | 563     | 409   | 565        | 408        | <b>563</b> | <b>409</b> | 88     | <b>565</b> | <b>408</b> | 565        | 408        | 566        | 408        |
| 557.xz_r        | 88     | 669     | 142   | <b>674</b> | <b>141</b> | 674        | 141        | 88     | 680        | 140        | 682        | 139        | <b>680</b> | <b>140</b> |

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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/cpu2017-1.0.2/lib/ia32:/home/cpu2017-1.0.2/lib/intel64:/home/cpu2017-1.0.2/je5.0.1-32:/home/cpu2017-1.0.2/je5.0.1-64"  
Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM  
memory using Redhat Enterprise Linux 7.4  
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  
runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>  
jemalloc: built with the RedHat Enterprise 7.4, 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)

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

Test Date: Apr-2018  
Hardware Availability: Feb-2018  
Software Availability: Feb-2018

### General Notes (Continued)

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 Settings:  
SNC = Enable  
Stale AtoS = Enable  
LLC dead line alloc = Disable  
IMC Interleaving = 1-way Interleave  
Patrol Scrub = Disable  
Sysinfo program /home/cpu2017-1.0.2/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f  
running on linux-8u2w Fri Apr 13 01:45:58 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 6152 CPU @ 2.10GHz  
2 "physical id"s (chips)  
88 "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 : 22  
siblings : 44  
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28  
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28

From lscpu:  
Architecture: x86\_64  
CPU op-mode(s): 32-bit, 64-bit  
Byte Order: Little Endian  
CPU(s): 88  
On-line CPU(s) list: 0-87  
Thread(s) per core: 2  
Core(s) per socket: 22  
Socket(s): 2  
NUMA node(s): 4  
Vendor ID: GenuineIntel  
CPU family: 6

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

### Platform Notes (Continued)

```

Model: 85
Model name: Intel(R) Xeon(R) Gold 6152 CPU @ 2.10GHz
Stepping: 4
CPU MHz: 1000.000
CPU max MHz: 2101.0000
CPU min MHz: 1000.0000
BogoMIPS: 4200.01
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 30976K
NUMA node0 CPU(s): 0-2,6-8,11-13,17,18,44-46,50-52,55-57,61,62
NUMA node1 CPU(s): 3-5,9,10,14-16,19-21,47-49,53,54,58-60,63-65
NUMA node2 CPU(s): 22-24,28-30,33-35,39,40,66-68,72-74,77-79,83,84
NUMA node3 CPU(s): 25-27,31,32,36-38,41-43,69-71,75,76,80-82,85-87
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 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 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

```

```

/proc/cpuinfo cache data
cache size : 30976 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 1 2 6 7 8 11 12 13 17 18 44 45 46 50 51 52 55 56 57 61 62
node 0 size: 95338 MB
node 0 free: 94890 MB
node 1 cpus: 3 4 5 9 10 14 15 16 19 20 21 47 48 49 53 54 58 59 60 63 64 65
node 1 size: 96760 MB
node 1 free: 96375 MB
node 2 cpus: 22 23 24 28 29 30 33 34 35 39 40 66 67 68 72 73 74 77 78 79 83 84
node 2 size: 96760 MB
node 2 free: 96493 MB
node 3 cpus: 25 26 27 31 32 36 37 38 41 42 43 69 70 71 75 76 80 81 82 85 86 87
node 3 size: 96758 MB
node 3 free: 96465 MB
node distances:
node 0 1 2 3

```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

### Platform Notes (Continued)

```
0: 10 11 21 21
1: 11 10 21 21
2: 21 21 10 11
3: 21 21 11 10
```

From /proc/meminfo

```
MemTotal:      394872212 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

/usr/bin/lsb\_release -d

```
SUSE Linux Enterprise Server 12 SP2
```

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

SuSE-release:

```
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
```

```
# 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-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

uname -a:

```
Linux linux-8u2w 4.4.114-92.64-default #1 SMP Thu Feb 1 19:18:19 UTC 2018 (c6ce5db)
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 5 Apr 13 01:37

SPEC is set to: /home/cpu2017-1.0.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p4  xfs   1.5T  721G  728G  50% /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 02/28/2018

Memory:

```
12x Hynix HMA84GR7AFR4N-VK 32 GB 2 rank 2666
```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

### Platform Notes (Continued)

(End of data from sysinfo program)

### Compiler Version Notes

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

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

=====  
CC 500.perlbench\_r(peak) 502.gcc\_r(peak)  
-----

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

=====  
CXXC 520.omnetpp\_r(base) 523.xalanbmk\_r(base) 531.deepsjeng\_r(base)  
541.leela\_r(base)  
-----

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

=====  
CXXC 520.omnetpp\_r(peak) 523.xalanbmk\_r(peak) 531.deepsjeng\_r(peak)  
541.leela\_r(peak)  
-----

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

=====  
FC 548.exchange2\_r(base, peak)  
-----

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



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

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



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

## Base Other Flags

C benchmarks:

-m64 -std=c11

C++ benchmarks:

-m64

Fortran benchmarks:

-m64

## Peak Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

## 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.xalancbmk\_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  
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-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3  
-fno-strict-overflow -L/usr/local/je5.0.1-64/lib

(Continued on next page)





# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

## Peak Optimization Flags (Continued)

500.perlbench\_r (continued):

-ljemalloc

502.gcc\_r: -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  
-L/usr/local/je5.0.1-32/lib -ljemalloc

505.mcf\_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div

-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib  
-ljemalloc

525.x264\_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div

-qopt-mem-layout-trans=3 -fno-alias  
-L/usr/local/je5.0.1-64/lib -ljemalloc

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

C++ benchmarks:

520.omnetpp\_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo

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

523.xalancbmk\_r: -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  
-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

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 (except as noted below):

-m64 -std=c11

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-1029GQ-TVRT (X11DGQ, Intel Xeon Gold 6152)

SPECrate2017\_int\_base = 204

SPECrate2017\_int\_peak = 217

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

**Test Date:** Apr-2018  
**Hardware Availability:** Feb-2018  
**Software Availability:** Feb-2018

## Peak Other Flags (Continued)

502.gcc\_r: -m32 -std=c11

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

523.xalancbmk\_r: -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.html>

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SKL-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.xml>

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SKL-revB.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 v1.0.2 on 2018-04-13 04:45:57-0400.

Report generated on 2018-10-31 19:21:00 by CPU2017 PDF formatter v6067.

Originally published on 2018-05-23.