## SPEC® CPU2017 Integer Speed Result

**Supermicro**
SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>10.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>10.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>001176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Oct-2018</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2018</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Mar-2018</td>
</tr>
</tbody>
</table>

### Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_s</td>
<td>6</td>
<td>9.10</td>
<td>12.2</td>
</tr>
<tr>
<td>gcc_s</td>
<td>6</td>
<td>12.5</td>
<td>15.3</td>
</tr>
<tr>
<td>mcf_s</td>
<td>6</td>
<td>6.88</td>
<td>6.96</td>
</tr>
<tr>
<td>omnetpp_s</td>
<td>6</td>
<td>12.1</td>
<td>15.3</td>
</tr>
<tr>
<td>xalancbmk_s</td>
<td>6</td>
<td>6.69</td>
<td>14.3</td>
</tr>
<tr>
<td>x264_s</td>
<td>6</td>
<td>11.7</td>
<td>16.5</td>
</tr>
<tr>
<td>deepsjeng_s</td>
<td>6</td>
<td>6.69</td>
<td>14.3</td>
</tr>
<tr>
<td>leela_s</td>
<td>6</td>
<td>5.40</td>
<td></td>
</tr>
<tr>
<td>exchange2_s</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xz_s</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon E-2176G
- **Max MHz.:** 4700
- **Nominal:** 3700
- **Enabled:** 6 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:** 12 MB I+D on chip per chip
- **Other:** None
- **Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)
- **Storage:** 1 x 200 GB SATA III SSD
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 12 SP3 (x86_64)
- **Kernel:** 4.4.104-94.11-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 1.0a released Aug-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

Supermicro
SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)

SPECspeed2017_int_base = 10.2
SPECspeed2017_int_peak = 10.6

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Threads</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Threads</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>6</td>
<td>238</td>
<td>7.46</td>
<td>236</td>
<td>7.51</td>
<td>10.6</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>6</td>
<td>327</td>
<td>12.2</td>
<td>326</td>
<td>12.2</td>
<td>10.6</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>6</td>
<td>311</td>
<td>15.2</td>
<td>308</td>
<td>15.3</td>
<td>10.6</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>6</td>
<td>238</td>
<td>6.86</td>
<td>235</td>
<td>6.94</td>
<td>10.6</td>
</tr>
<tr>
<td>623.xalanchmk_s</td>
<td>6</td>
<td>115</td>
<td>12.3</td>
<td>117</td>
<td>12.1</td>
<td>10.6</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>6</td>
<td>124</td>
<td>14.3</td>
<td>124</td>
<td>14.3</td>
<td>10.6</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>6</td>
<td>214</td>
<td>6.70</td>
<td>214</td>
<td>6.69</td>
<td>10.6</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>6</td>
<td>316</td>
<td>5.41</td>
<td>316</td>
<td>5.41</td>
<td>10.6</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>6</td>
<td>175</td>
<td>16.8</td>
<td>174</td>
<td>16.9</td>
<td>10.6</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>6</td>
<td>528</td>
<td>11.7</td>
<td>528</td>
<td>11.7</td>
<td>10.6</td>
</tr>
</tbody>
</table>

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"
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
# SPEC CPU2017 Integer Speed Result

**Supermicro**

SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>10.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>10.6</td>
</tr>
</tbody>
</table>

## Platform Notes

BIOS Settings:
Hyper-Threading = Disable

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcd0f2999c33d61f64985e45859ea9
running on linux-vhvh Sun Oct 28 23:00:14 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) E-2176G CPU @ 3.70GHz
  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:                 158
Model name:            Intel(R) Xeon(R) E-2176G CPU @ 3.70GHz
Stepping:              10
CPU MHz:               4463.672
CPU max MHz:           4700.000
CPU min MHz:           800.000
BogoMIPS:              7391.98
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              256K
L3 cache:              12288K
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
```

(Continued on next page)
## Platform Notes (Continued)

- 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 xtrr 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_ctxtsw spec_ctrl retpoline
- kaiser tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep
- bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1

```
/proc/cpuinfo cache data
  cache size  : 12288 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: 64087 MB
  node 0 free: 63329 MB
  node distances:
    node 0
      0: 10

From `/proc/meminfo`
  MemTotal:       65625632 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

From `/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-vhbh 4.4.114-94.11-default #1 SMP Thu Feb 1 19:28:26 UTC 2018 (4309ff9)
```

(Continued on next page)
Supermicro
SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)

SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

SPECspeed2017_int_base = 10.2
SPECspeed2017_int_peak = 10.6

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

Platform Notes (Continued)

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 Oct 28 22:55
SPEC is set to: /home/cpu2017

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. 1.0a 08/24/2018
Memory:
4x Micron 18ADF2G72AZ-2G6H1R 16 GB 2 rank 2667

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CXX 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base) 641.leela_s(base)
==============================================================================
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
CXX 620.omnetpp_s(peak) 623.xalancbmk_s(peak) 631.deepsjeng_s(peak) 641.leela_s(peak)
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
icpc (ICC) 18.0.2 20180210
(Continued on next page)
Supermicro
SuperServer 1019C-HTN2 (X11SCZ-F , Intel Xeon E-2176G)

**SPEC CPU2017 Integer Speed Result**

**SPECspeed2017_int_base = 10.2**

**SPECspeed2017_int_peak = 10.6**

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

---

**Compiler Version Notes (Continued)**

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
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

---
Supermicro
SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)

SPEC CPU2017 Integer Speed Result

SPECspeed2017_int_base = 10.2
SPECspeed2017_int_peak = 10.6

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>001176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Oct-2018</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2018</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Mar-2018</td>
</tr>
</tbody>
</table>

**Base Optimization Flags**

C benchmarks:
- Wl,-z,muldefs -xCORE-AVX2 -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-AVX2 -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-AVX2 -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

**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
SPEC CPU2017 Integer Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro
SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>10.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>10.6</td>
</tr>
</tbody>
</table>

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

Test Date: Oct-2018
Hardware Availability: Jul-2018
Software Availability: Mar-2018

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX2 -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-AVX2 -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-AVX2 -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: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-prefetch -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-AVX2 -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

623.xalancbmk_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -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-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs
-L/usr/local/je5.0.1-64/lib -ljemalloc
**SPEC CPU2017 Integer Speed Result**

<table>
<thead>
<tr>
<th>Supermicro</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SuperServer 1019C-HTN2 (X11SCZ-F, Intel Xeon E-2176G)</td>
<td>SPECspeed2017_int_base = 10.2</td>
</tr>
<tr>
<td></td>
<td>SPECspeed2017_int_peak = 10.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2017 License:</td>
<td>001176</td>
<td></td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>Supermicro</td>
<td>Oct-2018</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Supermicro</td>
<td>Hardware Availability: Jul-2018</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Oct-2018</td>
<td>Software Availability: Mar-2018</td>
</tr>
</tbody>
</table>

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

- [Intel-ic18.0-official-linux64.2017-12-21.html](http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.html)
- [Supermicro-Platform-Settings-V1.2-SKL-revD.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:

- [Intel-ic18.0-official-linux64.2017-12-21.xml](http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml)
- [Supermicro-Platform-Settings-V1.2-SKL-revD.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.

Tested with SPEC CPU2017 v1.0.5 on 2018-10-28 23:00:14-0400.