### SPEC® CPU2017 Floating Point Speed Result

**Supermicro**
SuperServer 5019C-L (X11SCL-IF , Intel Xeon E-2176G)

**SPECspeed2017_fp_base** = 28.6  
**SPECspeed2017_fp_peak** = 28.8

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<th>Thread Name</th>
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<th>SPECspeed2017_fp_base</th>
<th>SPECspeed2017_fp_peak</th>
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#### 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
- **Memory:** 32 GB (2 x 16 GB 2Rx8 PC4-2666V-E)  
- **Storage:** 1 x 512 GB NVMe SSD  
- **Other:** None

#### Software
- **OS:** SUSE Linux Enterprise Server 12 SP3 (x86_64)  
- **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
- **Firmware:** Supermicro BIOS version 1.0 released Sep-2018
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
  - Base Pointers: 64-bit  
  - Peak Pointers: 64-bit  
  - Other: jemalloc memory allocator library V5.0.1

---

**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Test Date:** Oct-2018  
**Hardware Availability:** Nov-2018  
**Tested by:** Supermicro  
**Software Availability:** Mar-2018  
**Software:** Intel Xeon E-2176G
SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro
SuperServer 5019C-L (X11SCL-IF, Intel Xeon E-2176G)

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Results Table

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</table>

SPECspeed2017_fp_base = 28.6
SPECspeed2017_fp_peak = 28.8

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,compact"
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
SPEC CPU2017 Floating Point Speed Result

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SuperServer 5019C-L (X11SCL-IF, Intel Xeon E-2176G)

SPECspeed2017_fp_base = 28.6
SPECspeed2017_fp_peak = 28.8

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

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

Platform Notes

BIOS Settings:
Hyper-Threading = Disable
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-0lg1 Wed Oct 31 05:56:12 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:               4395.081
CPU max MHz:           4500.0000
CPU min MHz:           800.0000
BogoMIPS:              7391.99
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)
Supermicro
SuperServer 5019C-L (X11SCL-IF , Intel Xeon E-2176G)

| SPECspeed2017_fp_base | 28.6 |
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CPU2017 License: 001176
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Hardware Availability: Nov-2018
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Platform Notes (Continued)

```
1m constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
aperfmpref 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 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 hle avx2 smep
bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1
```

```
From 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)
nod 0 cpus: 0 1 2 3 4 5
node 0 size: 32088 MB
node 0 free: 24781 MB
node distances:
node 0
  0:  10
```

```
From /proc/meminfo
MemTotal:       32858692 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"
```

```
uname -a:
Linux linux-0lg1 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:

(Continued on next page)
Supermicro
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Tested by: Supermicro
Software Availability: Mar-2018

Platform Notes (Continued)

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 31 01:15

SPEC is set to: /home/cpu2017
   Filesystem Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p4 xfs   435G   32G  404G  8% /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. 1.0 09/14/2018
Memory: 2x Micron 18ADF2G72AZ-2G6H1R 16 GB 2 rank 2667

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
 CC  619.lbm_s(base) 638.imagick_s(base, peak) 644.nab_s(base, peak)
==============================================================================
 icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
 FC  607.cactuBSSN_s(base, peak)
==============================================================================
 icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

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### Supermicro
SuperServer 5019C-L (X11SCL-IF , Intel Xeon E-2176G)

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**SPECspeed2017_fp_base** = 28.6  
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**Compiler Version Notes (Continued)**

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### Base Compiler Invocation

**C benchmarks:**

```bash
icc -m64 -std=c11
```

**Fortran benchmarks:**

```bash
ifort -m64
```

**Benchmarks using both Fortran and C:**

```bash
ifort -m64 icc -m64 -std=c11
```
Supermicro
SuperServer 5019C-L (X11SCL-IF, Intel Xeon E-2176G)
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Test Sponsor: Supermicro
Tested by: Supermicro
Test Date: Oct-2018
Hardware Availability: Nov-2018
Software Availability: Mar-2018

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ifort -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
619.lbm_s: basepeak = yes

638.imagick_s: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP

644.nab_s: basepeak = yes

Fortran benchmarks:
603.bwaves_s: basepeak = yes

649.fotonik3d_s: -prof-gen(pass 1) -prof-use(pass 2) -DSPEC_SUPPRESS_OPENMP
-DSPEC_OPENMP -O2 -xCORE-AVX2 -qopt-prefetch -ipo -O3
-ffinite-math-only -no-prec-div -qopt-mem-layout-trans=3
-qopenmp -nostandard-realloc-lhs

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

(Continued on next page)
### Peak Optimization Flags (Continued)

**621.wrf_s:**
- `-prof-gen(pass 1)`
- `-prof-use(pass 2)`
- `-O2`
- `-xCORE-AVX2`
- `-qopt-prefetch`
- `-ipo`
- `-O3`
- `-ffinite-math-only`
- `-no-prec-div`
- `-qopt-mem-layout-trans=3`
- `-DSPEC_SUPPRESS_OPENMP`
- `-qopenmp`
- `-DSPEC_OPENMP`
- `-nostandard-realloc-lhs`

**627.cam4_s:**
- `-xCORE-AVX2`
- `-ipo`
- `-O3`
- `-no-prec-div`
- `-qopt-prefetch`
- `-ffinite-math-only`
- `-qopt-mem-layout-trans=3`
- `-qopenmp`
- `-DSPEC_OPENMP`
- `-nostandard-realloc-lhs`

**628.pop2_s:**
- Same as 621.wrf_s

### Benchmarks using Fortran, C, and C++:

**607.cactuBSSN_s:**
- `basepeak = yes`

---

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


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