### SPEC® CPU2017 Floating Point Rate Result

**Supermicro**
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134)

**SPECrate2017_fp_base = 31.5**
**SPECrate2017_fp_peak = 32.0**

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<tr>
<th>Test Sponsor:</th>
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**CPU Name:** Intel Xeon E-2134

**Max MHz.:** 4500

**Nominal:** 3500

**Enabled:** 4 cores, 1 chip, 2 threads/core

**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)

**Storage:** 1 x 2 TB SATA III 7200 RPM

**Other:** None

**OS:** SUSE Linux Enterprise Server 12 SP3

**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:** No

**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:** None
## SPEC CPU2017 Floating Point Rate Result

**Supermicro**  
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134)

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**SPECrate2017_fp_base** = 31.5  
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### Results Table

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**SPECrate2017_fp_base** = 31.5  
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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 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.

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

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

Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bdc091c0f  
running on linux-9m9c Wed Oct 24 03:24:33 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-2134 CPU @ 3.50GHz  
  - 1 "physical id"s (chips)  
  - 8 "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 : 8  
- 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)**: 8  
- **On-line CPU(s) list**: 0-7  
- **Thread(s) per core**: 2  
- **Core(s) per socket**: 4  
- **Socket(s)**: 1  
- **NUMA node(s)**: 1  
- **Vendor ID**: GenuineIntel  
- **CPU family**: 6  
- **Model**: 158  
- **Model name**: Intel(R) Xeon(R) E-2134 CPU @ 3.50GHz  
- **Stepping**: 10  
- **CPU MHz**: 4387.983  
- **CPU max MHz**: 4500.0000  
- **CPU min MHz**: 800.0000  
- **BogoMIPS**: 7007.95  
- **Virtualization**: VT-x  
- **L1d cache**: 32K

(Continued on next page)
**SPEC CPU2017 Floating Point Rate Result**

Copyright 2017-2018 Standard Performance Evaluation Corporation

Supermicro
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134)

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**CPU2017 License:** 001176

**Test Sponsor:** Supermicro

**Test Date:** Oct-2018

**Tested by:** Supermicro

**Hardware Availability:** Nov-2018

**Software Availability:** Mar-2018

### Platform Notes (Continued)

L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node0 CPU(s): 0-7

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 ntopology nonstop_tsc
aperfmpref eagerpfpn pi pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg
fma cx16 xtrp 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 vmni flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep
bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsaves 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 4 5 6 7
node 0 size: 64151 MB
node 0 free: 54410 MB
node distances:
node 0
0: 10

From /proc/meminfo
MemTotal: 65690984 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/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"

(Continued on next page)
Supermicro
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134)

SPEC CPU2017 Floating Point Rate Result

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

Test Date: Oct-2018
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Platform Notes (Continued)

uname -a:
    Linux linux-9m9c 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

run-level 3 Oct 23 20:26

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. 1.0 09/19/2018
    Memory:
        4x Micron 18ADF2G72AZ-2G6H1R 16 GB 2 rank 2667

(End of data from sysinfo program)

Compiler Version Notes

CC  519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base, peak)

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CC  519.lbm_r(peak)

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CXXC 508.namd_r(base) 510.parest_r(base, peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

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**Test Sponsor:** Supermicro  
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**Compiler Version Notes (Continued)**

```plaintext
CXXC 508.namd_r(peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CC 511.povray_r(base) 526.blender_r(base, peak)

icpc (ICC) 18.0.2 20180210
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FC 507.cactuBSSN_r(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.

FC 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)

ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 554.roms_r(peak)
```

(Continued on next page)
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**/compiler Version Notes (Continued)**

```text
ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
CC  521.wrf_r(base) 527.cam4_r(base)
==============================================================================
ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
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==============================================================================
CC  521.wrf_r(peak) 527.cam4_r(peak)
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ifort (IFORT) 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.
```

---

**Base Compiler Invocation**

C benchmarks:
```bash
icc -m64 -std=c11
```

C++ benchmarks:
```bash
icpc -m64
```

Fortran benchmarks:
```bash
ifort -m64
```

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

Benchmarks using both C and C++:
```bash
icpc -m64 icc -m64 -std=c11
```

Benchmarks using Fortran, C, and C++:
```bash
icpc -m64 icc -m64 -std=c11 ifort -m64
```
Supermicro
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134)

| SPECrate2017_fp_base = 31.5 |
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CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Base Portability Flags

- 503.bwaves_r: -DSPEC_LP64
- 507.cactuBSSN_r: -DSPEC_LP64
- 508.namd_r: -DSPEC_LP64
- 510.parest_r: -DSPEC_LP64
- 511.povray_r: -DSPEC_LP64
- 519.lbm_r: -DSPEC_LP64
- 521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
- 526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
- 527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
- 538.imagick_r: -DSPEC_LP64
- 544.nab_r: -DSPEC_LP64
- 549.fotonik3d_r: -DSPEC_LP64
- 554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both C and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
### SPEC CPU2017 Floating Point Rate Result

**Supermicro**  
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134)

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<td>Test Sponsor</td>
<td>Supermicro</td>
</tr>
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<td>Tested by</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Test Date</td>
<td>Oct-2018</td>
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<tr>
<td>Hardware Availability</td>
<td>Nov-2018</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Mar-2018</td>
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#### Peak Compiler Invocation

- **C benchmarks:**
  
  icc -m64 -std=c11

- **C++ benchmarks:**
  
  icpc -m64

- **Fortran benchmarks:**
  
  ifort -m64

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

- **Benchmarks using both C and C++:**
  
  icpc -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:**
  
  519.lbm_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

  538.imagick_r: basepeak = yes

  544.nab_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

- **C++ benchmarks:**
  
  508.namd_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

(Continued on next page)
**SPEC CPU2017 Floating Point Rate Result**

**Supermicro**
SuperServer 5019C-M4L (X11SCL-LN4F , Intel Xeon E-2134)  

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<th>SPECrate2017_fp_peak</th>
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<td>32.0</td>
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**CPU2017 License:** 001176  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro  

**Peak Optimization Flags (Continued)**

510.parest_r: basepeak = yes

Fortran benchmarks:

503.bwaves_r -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

549.fotonik3d_r: Same as 503.bwaves_r

554.roms_r -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both Fortran and C:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both C and C++:

511.povray_r -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

526.blender_r -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: 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:

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 CPU2017 Floating Point Rate Result**

**Supermicro**
SuperServer 5019C-M4L (X11SCL-LN4F, Intel Xeon E-2134) | SPECrate2017_fp_base = 31.5
SPECrate2017_fp_peak = 32.0

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU2017 v1.0.2 on 2018-10-24 03:24:32-0400.
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