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

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- **CPU2017 License:** 001176
- **Test Sponsor:** Supermicro
- **Tested by:** Supermicro
- **Test Date:** Sep-2019
- **Hardware Availability:** Nov-2018
- **Software Availability:** Nov-2018

### Threads

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<tr>
<td>607.cactuBSSN_s 4</td>
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<tr>
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<td>628.pop2_s 4</td>
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<td>638.imagick_s 4</td>
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<tr>
<td>644.nab_s 4</td>
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<tr>
<td>649.fotonik3d_s 4</td>
<td></td>
</tr>
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<td>654.roms_s 4</td>
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</tbody>
</table>

### 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
- **Cache L2:** 256 KB I+D on chip per core
- **Cache L3:** 8 MB I+D on chip per chip
- **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:** Yes
- **Firmware:** Version 1.0b released May-2019
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** None
- **Power Management:** --
Supermicro
SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECspeed®2017_fp_base = 24.7
SPECspeed®2017_fp_peak = 25.0

Results Table

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SPECspeed®2017_fp_base = 24.7
SPECspeed®2017_fp_peak = 25.0

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"
OMP_STACKSIZE = "192M"

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

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

SPECspeed®2017_fp_base = 24.7
SPECspeed®2017_fp_peak = 25.0

Platform Notes

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcede8f2999c33d61f64985e45859ea9
running on linux-65nv Thu Sep 26 05:26:06 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: 4000.000
CPU max MHz: 4000.0000
CPU min MHz: 800.0000
BogoMIPS: 8015.12
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
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
aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg fma

(Continued on next page)
Platform Notes (Continued)

cx16 xtpr pdcem 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 pin pts dtherm
hwp hwp_notify hwp_act_window hwp_epp intel_pt rsb_ctxsw spec_ctrl retpoline kaiser
tpr_shadow vmmi flexpriority ept vpid fsxgsbase 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: 45153 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:
    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-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

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result

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

<table>
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<th>Test Date: Sep-2019</th>
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<tr>
<td>Test Sponsor: Supermicro</td>
<td>Hardware Availability: Nov-2018</td>
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<tr>
<td>Tested by: Supermicro</td>
<td>Software Availability: Nov-2018</td>
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SPECspec®2017_fp_base = 24.7
SPECspec®2017_fp_peak = 25.0

Platform Notes (Continued)

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
  619.lbm_s(base, peak) 638.imagick_s(base, peak)
  644.nab_s(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++, C, Fortran | 607.cactuBSSN_s(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.

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.

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.

Fortran
  603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)

(Continued on next page)
<table>
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<th>Benchmark</th>
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<td>654.roms_s(base, peak)</td>
<td>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.</td>
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<tr>
<td>621.wrf_s(base, peak)</td>
<td>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.</td>
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<td>627.cam4_s(base, peak)</td>
<td>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.</td>
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<tr>
<td>628.pop2_s(base, peak)</td>
<td>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.</td>
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</table>

**Base Compiler Invocation**

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

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

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

Benmarks using Fortran, C, and C++:
```bash
icpc -m64 icc -m64 -std=c11 ifort -m64
```

**Base Portability Flags**

```
603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian -assume byterecl
638.imagick_s: -DSPEC_LP64
```
Supermicro
SuperServer 5019C-WR (X11SCW-F, Intel Core i3-8350K)

SPECspeed®2017_fp_base = 24.7
SPECspeed®2017_fp_peak = 25.0

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

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

Base Portability Flags (Continued)
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags
C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP

Fortran benchmarks:
-DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-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=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs

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
SPEC CPU®2017 Floating Point Speed Result

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

SPECspeed®2017_fp_base = 24.7
SPECspeed®2017_fp_peak = 25.0

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

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

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP

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=4
-qopenmp -nostandard-realloc-lhs

654.roms_s: -DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4
-qopenmp -nostandard-realloc-lhs

Benchmarks using both Fortran and C:

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=4 -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=4 -qopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs

628.pop2_s: Same as 621.wrf_s

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs

The flags files that were used to format this result can be browsed at
### SPEC CPU®2017 Floating Point Speed Result

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


### Specifications

**Supermicro**

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

**CPU2017 License:** 001176  |  **Test Date:** Sep-2019
**Test Sponsor:** Supermicro |  **Hardware Availability:** Nov-2018
**Tested by:** Supermicro |  **Software Availability:** Nov-2018

**SPECspeed®2017_fp_base = 24.7**

**SPECspeed®2017_fp_peak = 25.0**

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

Tested with SPEC CPU®2017 v1.0.5 on 2019-09-25 17:26:06-0400.