### SPEC® CPU2017 Floating Point Rate Result

**Supermicro**  
SuperWorkstation 5039C-T (X11SCA , Intel Celeron G4900T)

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Supermicro</th>
<th>Hardware Availability</th>
<th>Oct-2018</th>
</tr>
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<tbody>
<tr>
<td>Tested by</td>
<td>Supermicro</td>
<td>Software Availability</td>
<td>Sep-2018</td>
</tr>
</tbody>
</table>

#### SPECrate2017_fp_base = 11.0

#### SPECrate2017_fp_peak = 11.2

<table>
<thead>
<tr>
<th>Software</th>
<th>OS: SUSE Linux Enterprise Server 12 SP3 (x86_64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 19.0.0.117 of Intel C/C++</td>
</tr>
<tr>
<td></td>
<td>Compiler for Linux; Fortran: Version 19.0.0.117 of Intel Fortran Compiler for Linux</td>
</tr>
<tr>
<td></td>
<td>Parallel: No</td>
</tr>
<tr>
<td></td>
<td>Firmware: Version 1.0a released Sep-2018</td>
</tr>
<tr>
<td></td>
<td>File System: xfs</td>
</tr>
<tr>
<td></td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td></td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td></td>
<td>Peak Pointers: 64-bit</td>
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<td></td>
<td>Other: None</td>
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<table>
<thead>
<tr>
<th>Hardware</th>
<th>CPU Name: Intel Celeron G4900T</th>
</tr>
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<tbody>
<tr>
<td>Max MHz.:</td>
<td>2900</td>
</tr>
<tr>
<td>Nominal:</td>
<td>2900</td>
</tr>
<tr>
<td>Enabled:</td>
<td>2 cores, 1 chip</td>
</tr>
<tr>
<td>Orderable:</td>
<td>1 chip</td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L2:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3:</td>
<td>2 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
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<tr>
<td>Memory:</td>
<td>64 GB (4 x 16 GB 2Rx8 PC4-2666V-E, running at 2400)</td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 200 GB SATA III SSD</td>
</tr>
<tr>
<td>Other:</td>
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<table>
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<tr>
<th>Copies</th>
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<tr>
<td>503.bwaves_r</td>
<td>8.50</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>8.53</td>
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<tr>
<td>508.namd_r</td>
<td>5.90</td>
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<tr>
<td>510.parest_r</td>
<td>9.54</td>
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<tr>
<td>511.povray_r</td>
<td>11.6</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>10.7</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>11.9</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>8.97</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>9.85</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>10.3</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>9.88</td>
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<tr>
<td>549.fotonik3d_r</td>
<td>12.3</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>7.97</td>
</tr>
</tbody>
</table>

---

**Note:** The table above shows the breakdown of SPEC benchmarks along with their scores. The hardware and software specifications are also listed. The results are derived from the SPECbenchmarks, and the system configuration includes a CPU with specific characteristics and memory. The test was conducted by Supermicro, and the software version is detailed along with the operating system and other dependencies necessary for the test environment.
Supermicro
SuperWorkstation 5039C-T (X11SCA, Intel Celeron G4900T)

SPECrate2017_fp_base = 11.0
SPECrate2017_fp_peak = 11.2

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>2</td>
<td>378</td>
<td>53.0</td>
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<td>53.1</td>
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<td>52.9</td>
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<td>377</td>
<td>53.2</td>
<td>376</td>
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<tr>
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<td>298</td>
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<td>8.50</td>
<td>2</td>
<td>297</td>
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<td>298</td>
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<td>508.namd_r</td>
<td>2</td>
<td>322</td>
<td>5.91</td>
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<td>5.90</td>
<td>323</td>
<td>5.88</td>
<td>2</td>
<td>322</td>
<td>5.91</td>
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<td>511.povray_r</td>
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<td>403</td>
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<td>519.lbm_r</td>
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<td>11.9</td>
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<td>346</td>
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<td>526.blender_r</td>
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<td>340</td>
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<tr>
<td>527.cam4_r</td>
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<td>538.imagick_r</td>
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<td>491</td>
<td>10.1</td>
<td>482</td>
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<td>481</td>
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<tr>
<td>544.nab_r</td>
<td>2</td>
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<td>9.89</td>
<td>2</td>
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<tr>
<td>549.fotonik3d_r</td>
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<td>635</td>
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<td>634</td>
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<td>634</td>
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<td>399</td>
<td>7.97</td>
<td>2</td>
<td>390</td>
<td>8.16</td>
<td>390</td>
</tr>
</tbody>
</table>

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/intel64"

Binaries compiled on a system with 1x Intel Core i9-799X 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)

(Continued on next page)
General Notes (Continued)

is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Platform Notes

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-65nv Mon Mar 25 16:52:28 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) Celeron(R) G4900T CPU @ 2.90GHz
  1 "physical id"s (chips)
  2 "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 : 2
sibling : 2
physical 0: cores 0 1

From lscpu:
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                2
On-line CPU(s) list:   0,1
Thread(s) per core:    1
Core(s) per socket:    2
Socket(s):             1
NUMA node(s):          1
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 158
Model name:            Intel(R) Celeron(R) G4900T CPU @ 2.90GHz
Stepping:              11
CPU MHz:               2900.004
CPU max MHz:           2900.0000
CPU min MHz:           800.0000
BogoMIPS:              5807.97
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K

(Continued on next page)
Platform Notes (Continued)

L2 cache: 256K
L3 cache: 2048K
NUMA node0 CPU(s): 0,1
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 arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg cx16
xtrr pdcm pcid sse4_1 sse4_2 x2apic movbe mcmovcleartc ee movntxi mcmovcleartc
lahf_lm abm 3dnowprefetch arat epb invpcid_single pln pts dtherm hwp hwp_notify
hwp_act_window hwp_epb intel_pt rsb_ctxtaw spec_ctrl retpoline kaiser tpr_shadow vnmi
flexpriority ept vpid fsqgsbase tsc_adjust smep erms invpcid mpx rdseed smap
clfushopt xsaveopt xsavesm xgetbv1

From /proc/cpuinfo cache data
  cache size: 2048 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
  node 0 size: 64285 MB
  node 0 free: 56222 MB
  node distances:
  node 0
  0: 10

From /proc/meminfo
  MemTotal: 65828732 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"

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

Supermicro
SuperWorkstation 5039C-T (X11SCA, Intel Celeron G4900T)

SPECrate2017_fp_base = 11.0
SPECrate2017_fp_peak = 11.2

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

Test Date: Mar-2019
Hardware Availability: Oct-2018
Software Availability: Sep-2018

Platform Notes (Continued)

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
CVE-2017-5753 (Spectre variant 1): Mitigation: Barriers
CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS+IBPB

run-level 3 Mar 25 10:19

SPEC is set to: /home/cpu2017

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      xfs   145G   16G  129G  11% /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. 1.0a 09/27/2018
Memory:
    4x Micron 18ADF2G72AZ-2G6H1R 16 GB 2 rank 2667, configured at 2400

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
  CC   519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base, peak)
  Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.0.117 Build 20180804
  Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================

==============================================================================
  CC   519.lbm_r(peak)
  Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.0.117 Build 20180804
  Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================

==============================================================================
  CXXC 508.namd_r(base) 510.parest_r(base, peak)
(Continued on next page)
Compiler Version Notes (Continued)

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```
CXXC 508.namd_r(peak)
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

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

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```
CC 511.povray_r(peak)
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```
FC 507.cactuBSSN_r(base, peak)
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.0.117 Build 20180804  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

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

Supermicro
SuperWorkstation 5039C-T (X11SCA, Intel Celeron G4900T)

<table>
<thead>
<tr>
<th>CPU2017 License</th>
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<tr>
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<td>Mar-2019</td>
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<table>
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<td>Sep-2018</td>
</tr>
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SPECrate2017_fp_base = 11.0
SPECrate2017_fp_peak = 11.2

Compiler Version Notes (Continued)

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

------------------------------------------------------------------------------
FC  503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

------------------------------------------------------------------------------
FC  554.roms_r(peak)
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

------------------------------------------------------------------------------
CC  521.wrf_r(base) 527.cam4_r(base)
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.0.117 Build 20180804
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Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

------------------------------------------------------------------------------
CC  521.wrf_r(peak) 527.cam4_r(peak)
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:

```
icc -m64 -std=c11
```
Supermicro
SuperWorkstation 5039C-T (X11SCA, Intel Celeron G4900T)

SPECrate2017_fp_base = 11.0
SPECrate2017_fp_peak = 11.2

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

Base Compiler Invocation (Continued)

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

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:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -ipo -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**
SuperWorkstation 5039C-T (X11SCA, Intel Celeron G4900T)

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Test Date: Mar-2019</td>
<td>Hardware Availability: Oct-2018</td>
</tr>
<tr>
<td>Tested by: Supermicro</td>
<td>Software Availability: Sep-2018</td>
</tr>
</tbody>
</table>

**SPECrate2017_fp_base = 11.0**  
**SPECrate2017_fp_peak = 11.2**

---

### Base Optimization Flags (Continued)

**Fortran benchmarks:**

- `-xSSE4.2`  
- `-ipo -03 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs -align array32byte`

**Benchmarks using both Fortran and C:**

- `-xSSE4.2 -ipo -03 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs -align array32byte`

**Benchmarks using both C and C++:**

- `-xSSE4.2 -ipo -03 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3`

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

- `-xSSE4.2 -ipo -03 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs -align array32byte`

---

### 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`
### SPEC CPU2017 Floating Point Rate Result

**Supermicro**
SuperWorkstation 5039C-T (X11SCA, Intel Celeron G4900T)

**SPECrate2017_fp_base** = 11.0

**SPECrate2017_fp_peak** = 11.2

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<th>CPU2017 License:</th>
<th>001176</th>
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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>Mar-2019</td>
</tr>
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<td>Hardware Availability:</td>
<td>Oct-2018</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2018</td>
</tr>
</tbody>
</table>

#### Peak Portability Flags

Same as Base Portability Flags

#### Peak Optimization Flags

**C benchmarks:**

519.ibm_r:  
- -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3  
- no-prec-div -qopt-prefetch -ffinite-math-only  
- qopt-mem-layout-trans=3

538.imagick_r:  
- -ipo -O3 -no-prec-div -qopt-prefetch  
- ffinite-math-only -qopt-mem-layout-trans=3

544.nab_r: Same as 538.imagick_r

**C++ benchmarks:**

508.namd_r: basepeak = yes

510.parest_r:  
- -ipo -O3 -no-prec-div -qopt-prefetch  
- ffinite-math-only -qopt-mem-layout-trans=3

**Fortran benchmarks:**

503.bwaves_r:  
- -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch  
- ffinite-math-only -qopt-mem-layout-trans=3 -auto  
- nostandard-realloc-lhs -align array32byte

549.fotonik3d_r: Same as 503.bwaves_r

554.roms_r:  
- -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3  
- no-prec-div -qopt-prefetch -ffinite-math-only  
- qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs  
- align array32byte

**Benchmarks using both Fortran and C:**

- prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3  
- no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3 -auto  
- nostandard-realloc-lhs -align array32byte

**Benchmarks using both C and C++:**

511.povray_r:  
- -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3  
- no-prec-div -qopt-prefetch -ffinite-math-only

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

511.povray_r (continued):
-qopt-mem-layout-trans=3

526.blender_r: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
-align array32byte

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:

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