## SPEC® CPU2017 Floating Point Rate Result

### ASUS Computer Inc.
(Test Sponsor: Intel Corporation)

**ASUS Z170M-PLUS Motherboard (Intel Core i7-6700K)**

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base =</th>
<th>24.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_fp_peak =</td>
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</table>

| CPU2017 License: | 13 |
| Test Sponsor: | Intel Corporation |
| Tested by: | Intel Corporation |
| Test Date: | Dec-2016 |
| Hardware Availability: | Jan-2016 |
| Software Availability: | Sep-2016 |

<table>
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<tr>
<th>Copies</th>
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<tr>
<td>503.bwaves_r</td>
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<tr>
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<tr>
<td>508.namd_r</td>
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<td>510.parest_r</td>
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<td>511.povray_r</td>
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<td>519.lbm_r</td>
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<td>521.wrf_r</td>
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<td>526.blender_r</td>
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<td>538.imagick_r</td>
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<td>554.roms_r</td>
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</table>

### Hardware

**CPU Name:** Intel Core i7-6700K  
**Max MHz.:** 4200  
**Nominal:** 4000  
**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:** 32 GB (2 x 16 GB 2Rx8 PC4-3000N-U, running at 2133, G.SKILL Ripjaws F4-3000C14D-32GVK)  
**Storage:** 1.5 TB SATA HDD, 7200RPM  
**Other:** None

### Software

**OS:** Red Hat Enterprise Linux Server release 7.2 (Maipo)  
**Compiler:** C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux  
**Parallel:** No  
**File System:** xfs  
**System State:** Run level 5 (Multiuser Networking with GUI)  
**Base Pointers:** 64-bit  
**Peak Pointers:** Not Applicable  
**Other:** Microquill SmartHeap V10.2
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ASUSTeK Computer Inc.
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SPECrate2017_fp_base = 24.6
SPECrate2017_fp_peak = Not Run

Results Table

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</tbody>
</table>

SPECrate2017_fp_base = 24.6
SPECrate2017_fp_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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:
Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default

Platform Notes

Sysinfo program /home/specdev/workspace/cpu2017-rc4/Docs/sysinfo
Rev: r5007 of 2016-11-15 fc8dc82f217779bedfed4d94d580ba9
running on mrcarrol-desky Tue Dec 13 11:12:40 2016

(Continued on next page)
Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see http://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo

```
model name : Intel(R) Core(TM) i7-6700K CPU @ 4.00GHz
  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
    cache size : 8192 KB
```

The view from numactl --hardware follows. WARNING: a numactl 'node' might or might not correspond to a physical chip.

```plaintext
available: 1 nodes (0)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 32655 MB
node 0 free: 10791 MB
node distances:
  node   0
  0: 10
```

From /proc/meminfo

```plaintext
MemTotal:       32667216 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

From /etc/*release* /etc/*version*

```plaintext
os-release:
  NAME="Red Hat Enterprise Linux Server"
  VERSION="7.2 (Maipo)"
  ID="rhel"
  ID_LIKE="fedora"
  VERSION_ID="7.2"
  PRETTY_NAME=Storage
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
```

uname -a:

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Platform Notes (Continued)  
Linux mrcarro1-desky 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux  
run-level 5 Dec 7 09:08  
SPEC is set to: /home/specdev/workspace/cpu2017-rc4  
FileSystem Mount point Type Size Used Avail Use% Mounted on  
/dev/mapper/rhel-home xfs 1.5T 89G 1.5T 6% /home  

Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'  
(End of data from sysinfo program)  

Compiler Version Notes  

==============================================================================  
| CC  | 507.cactuBSSN_r(base) 511.povray_r(base) 519.lbm_r(base) 521.wrf_r(base)  
|     | 526.blender_r(base) 527.cam4_r(base) 538.imagick_r(base) 544.nab_r(base)  
|-----|----------------------------------------------------------------------------------  
| icc (ICC) | 17.0.0 20160721  
| Copyright (C) | 1985-2016 Intel Corporation. All rights reserved.  
|-----|----------------------------------------------------------------------------------  
| CXXC | 507.cactuBSSN_r(base) 508.namd_r(base) 510.parest_r(base)  
|     | 511.povray_r(base) 526.blender_r(base)  
|-----|----------------------------------------------------------------------------------  
| icpc (ICC) | 17.0.0 20160721  
| Copyright (C) | 1985-2016 Intel Corporation. All rights reserved.  
|-----|----------------------------------------------------------------------------------  
| FC  | 503.bwaves_r(base) 507.cactuBSSN_r(base) 521.wrf_r(base)  
|     | 527.cam4_r(base) 549.fotonik3d_r(base) 554.roms_r(base)  
|-----|----------------------------------------------------------------------------------  
| ifort (IFORT) | 17.0.0 20160721  
| Copyright (C) | 1985-2016 Intel Corporation. All rights reserved.  
|-----|----------------------------------------------------------------------------------  

Base Compiler Invocation  

C benchmarks:  
icc -m64 -std=c11  

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**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.libm_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

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**Base Optimization Flags**

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch  
-qopt-mem-layout-trans=3

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32  
-qopt-prefetch -qopt-mem-layout-trans=3 -L/sh10.2 -lsmartheap64

(Continued on next page)
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Base Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32 -qopt-prefetch
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs

Benchmarks using both C and C++:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32
-qopt-prefetch -qopt-mem-layout-trans=3 -L/sh10.2 -lsmartheap64

Benchmarks using Fortran, C, and C++:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-p32
-qopt-prefetch -qopt-mem-layout-trans=3 -nostandard-realloc-lhs
-L/sh10.2 -lsmartheap64

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2017/flags/Intel-ic17.0-official-linux64-revE.xml

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

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