SPEC® CPU2017 Floating Point Rate Result

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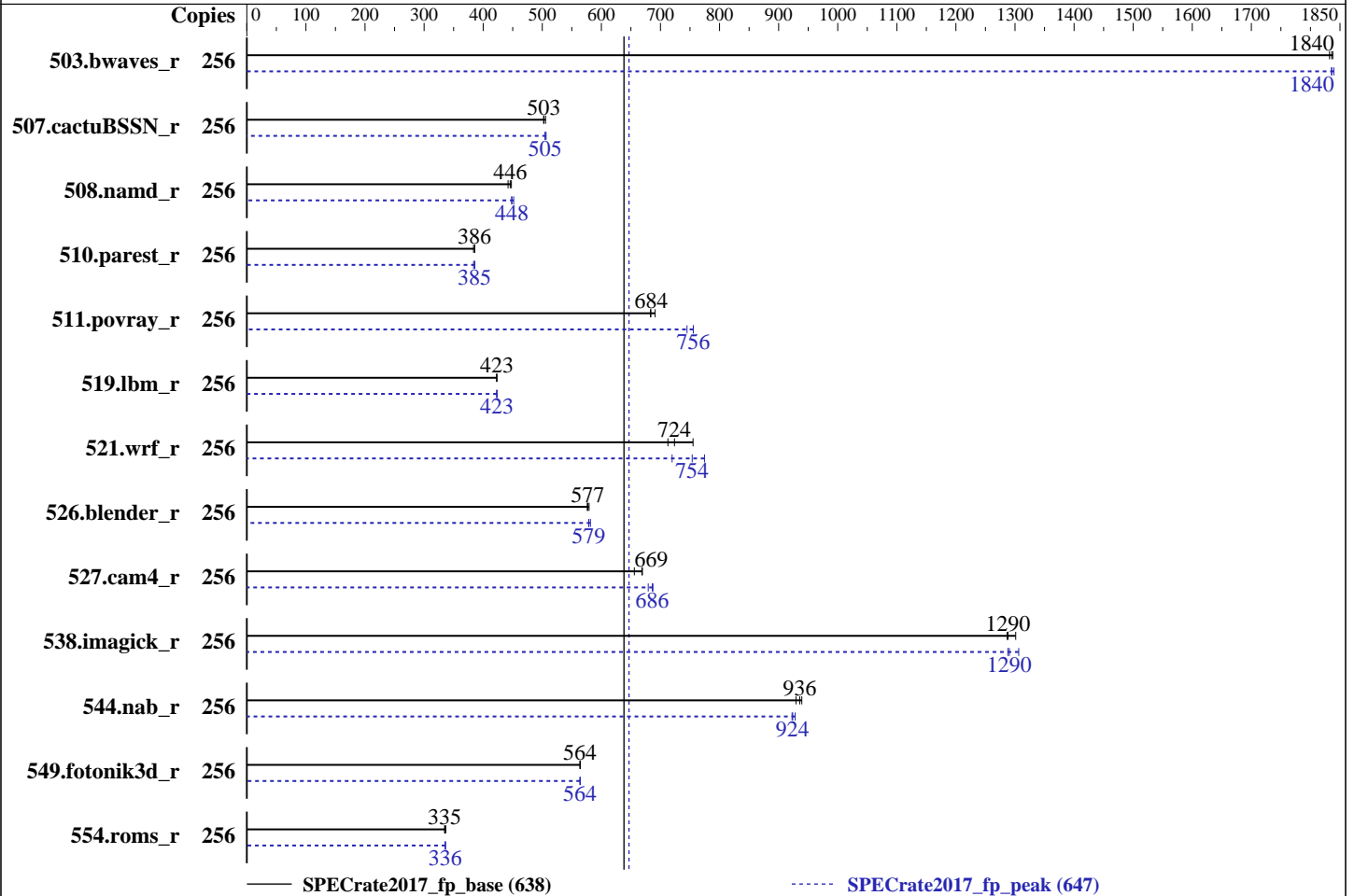## Sugon

I980-G30 (Intel Xeon Platinum 8153)

SPECrate2017_fp_base = 638

SPECrate2017_fp_peak = 647

CPU2017 License: 9046
Test Sponsor: Sugon
Tested by: Sugon

Test Date: Jan-2019
Hardware Availability: Nov-2018
Software Availability: Apr-2019

Benchmark	Copies	Base	Peak
503.bwaves_r	256	1840	1840
507.cactuBSSN_r	256	503	505
508.namd_r	256	446	448
510.parest_r	256	386	385
511.povray_r	256	684	756
519.lbm_r	256	423	423
521.wrf_r	256	724	754
526.blender_r	256	577	579
527.cam4_r	256	669	686
538.imagick_r	256	1290	1290
544.nab_r	256	936	924
549.fotonik3d_r	256	564	564
554.roms_r	256	335	336

SPECrate2017_fp_base (638)   SPECrate2017_fp_peak (647)

Hardware

CPU Name: Intel Xeon Platinum 8153
 Max MHz.: 2800
 Nominal: 2000
Enabled: 128 cores, 8 chips, 2 threads/core
Orderable: 2,4,8 chips
Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 22 MB I+D on chip per chip
 Other: None
Memory: 3 TB (96 x 32 GB 2Rx4 PC4-2666V-R)
Storage: 1.4 TB (4x 480GB SATA SSD, RAID5)
Other: None

Software

OS: SUSE Linux Enterprise Server 15
 4.12.14-25.25-default
Compiler: C/C++: Version 19.0.0.117 of Intel C/C++ Compiler
 for Linux Build 20180804;
 Fortran: Version 19.0.0.117 of Intel Fortran
 Compiler for Linux Build 20180804;
Parallel: No
Firmware: BIOS Version 0WDSL014 released Nov-2018
File System: btrfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: None

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

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Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
503.bwaves_r	256	1397	1840	**1398**	**1840**	1401	1830	256	1399	1840	**1398**	**1840**	1395	1840
507.cactuBSSN_r	256	**645**	**503**	641	506	645	502	256	640	506	**642**	**505**	642	505
508.namd_r	256	543	448	**546**	**446**	550	442	256	538	452	**542**	**448**	543	448
510.parest_r	256	1736	386	1745	384	**1737**	**386**	256	1745	384	**1738**	**385**	1735	386
511.povray_r	256	865	691	**874**	**684**	875	683	256	802	745	**791**	**756**	791	756
519.lbm_r	256	638	423	638	423	**638**	**423**	256	638	423	638	423	**638**	**423**
521.wrf_r	256	759	755	**792**	**724**	805	713	256	740	775	**761**	**754**	797	720
526.blender_r	256	**676**	**577**	677	576	673	579	256	674	579	671	581	**674**	**579**
527.cam4_r	256	669	669	683	656	**670**	**669**	256	651	687	659	679	**653**	**686**
538.imagick_r	256	495	1290	489	1300	**494**	**1290**	256	**493**	**1290**	494	1290	487	1310
544.nab_r	256	459	939	464	929	**460**	**936**	256	467	923	**466**	**924**	464	928
549.fotonik3d_r	256	1768	564	**1769**	**564**	1769	564	256	1769	564	**1769**	**564**	1769	564
554.roms_r	256	1215	335	**1214**	**335**	1208	337	256	1212	336	1210	336	**1211**	**336**

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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:
LD_LIBRARY_PATH = "/home/admin/benchmarks/cpu2017/lib/ia32:/home/admin/benchmarks/cpu2017/lib/
  intel64:/home/admin/benchmarks/cpu2017/je5.0.1-32:/home/admin/benchmarks/cpu2017/je5.0.1-64"
 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
 runcpu command invoked through numactl i.e.:
 numactl --interleave=all runcpu <etc>
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)

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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

```
BIOS Settings:
Intel Hyper Threading Technology set to Enabled
SNC set to Enabled
IMC Interleaving set to 1-way Interleave
Patrol Scrub set to Disabled
 Sysinfo program /home/admin/benchmarks/cpu2017/bin/sysinfo
 Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
 running on linux-xuei Thu Jan  3 02:01:34 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) Xeon(R) Platinum 8153 CPU @ 2.00GHz
       8  "physical id"s (chips)
       256 "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 : 16
       siblings  : 32
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 4: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 5: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 6: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
       physical 7: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

  From lscpu:
       Architecture:        x86_64
       CPU op-mode(s):      32-bit, 64-bit
       Byte Order:          Little Endian
       CPU(s):              256
       On-line CPU(s) list: 0-255
       Thread(s) per core:  2
       Core(s) per socket:  16
       Socket(s):           8
```

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Platform Notes (Continued)

```
        NUMA node(s):          16
        Vendor ID:             GenuineIntel
        CPU family:            6
        Model:                 85
        Model name:            Intel(R) Xeon(R) Platinum 8153 CPU @ 2.00GHz
        Stepping:              4
        CPU MHz:               2000.000
        CPU max MHz:           2800.0000
        CPU min MHz:           1000.0000
        BogoMIPS:              4000.00
        Virtualization:        VT-x
        L1d cache:             32K
        L1i cache:             32K
        L2 cache:              1024K
        L3 cache:              22528K
        NUMA node0 CPU(s):     0-3,8-11,128-131,136-139
        NUMA node1 CPU(s):     4-7,12-15,132-135,140-143
        NUMA node2 CPU(s):     16-19,24-27,144-147,152-155
        NUMA node3 CPU(s):     20-23,28-31,148-151,156-159
        NUMA node4 CPU(s):     32-35,40-43,160-163,168-171
        NUMA node5 CPU(s):     36-39,44-47,164-167,172-175
        NUMA node6 CPU(s):     48-51,56-59,176-179,184-187
        NUMA node7 CPU(s):     52-55,60-63,180-183,188-191
        NUMA node8 CPU(s):     64-67,72-75,192-195,200-203
        NUMA node9 CPU(s):     68-71,76-79,196-199,204-207
        NUMA node10 CPU(s):    80-83,88-91,208-211,216-219
        NUMA node11 CPU(s):    84-87,92-95,212-215,220-223
        NUMA node12 CPU(s):    96-99,104-107,224-227,232-235
        NUMA node13 CPU(s):    100-103,108-111,228-231,236-239
        NUMA node14 CPU(s):    112-115,120-123,240-243,248-251
        NUMA node15 CPU(s):    116-119,124-127,244-247,252-255
        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 cpuid
    aperfmperf pni pclmulqdq dtes64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm
    pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c
    rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3 invpcid_single pti
    intel_ppin ssbd mba ibrs ibpb stibp tpr_shadow vnmi flexpriority ept vpid fsgsbase
    tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a avx512f avx512dq
    rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsaveopt xsavec
    xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln
    pts hwp hwp_act_window hwp_epp hwp_pkg_req pku ospke flush_l1d

 /proc/cpuinfo cache data
    cache size : 22528 KB

 From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
```

(Continued on next page)

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Platform Notes (Continued)

```
 physical chip.
   available: 16 nodes (0-15)
   node 0 cpus: 0 1 2 3 8 9 10 11 128 129 130 131 136 137 138 139
   node 0 size: 192115 MB
   node 0 free: 180846 MB
   node 1 cpus: 4 5 6 7 12 13 14 15 132 133 134 135 140 141 142 143
   node 1 size: 193532 MB
   node 1 free: 189277 MB
   node 2 cpus: 16 17 18 19 24 25 26 27 144 145 146 147 152 153 154 155
   node 2 size: 193532 MB
   node 2 free: 189174 MB
   node 3 cpus: 20 21 22 23 28 29 30 31 148 149 150 151 156 157 158 159
   node 3 size: 193532 MB
   node 3 free: 189237 MB
   node 4 cpus: 32 33 34 35 40 41 42 43 160 161 162 163 168 169 170 171
   node 4 size: 193532 MB
   node 4 free: 189272 MB
   node 5 cpus: 36 37 38 39 44 45 46 47 164 165 166 167 172 173 174 175
   node 5 size: 193532 MB
   node 5 free: 189260 MB
   node 6 cpus: 48 49 50 51 56 57 58 59 176 177 178 179 184 185 186 187
   node 6 size: 193532 MB
   node 6 free: 189279 MB
   node 7 cpus: 52 53 54 55 60 61 62 63 180 181 182 183 188 189 190 191
   node 7 size: 193532 MB
   node 7 free: 186002 MB
   node 8 cpus: 64 65 66 67 72 73 74 75 192 193 194 195 200 201 202 203
   node 8 size: 193503 MB
   node 8 free: 189211 MB
   node 9 cpus: 68 69 70 71 76 77 78 79 196 197 198 199 204 205 206 207
   node 9 size: 193532 MB
   node 9 free: 189306 MB
   node 10 cpus: 80 81 82 83 88 89 90 91 208 209 210 211 216 217 218 219
   node 10 size: 193532 MB
   node 10 free: 188151 MB
   node 11 cpus: 84 85 86 87 92 93 94 95 212 213 214 215 220 221 222 223
   node 11 size: 193532 MB
   node 11 free: 189306 MB
   node 12 cpus: 96 97 98 99 104 105 106 107 224 225 226 227 232 233 234 235
   node 12 size: 193532 MB
   node 12 free: 185918 MB
   node 13 cpus: 100 101 102 103 108 109 110 111 228 229 230 231 236 237 238 239
   node 13 size: 193532 MB
   node 13 free: 189032 MB
   node 14 cpus: 112 113 114 115 120 121 122 123 240 241 242 243 248 249 250 251
   node 14 size: 193532 MB
   node 14 free: 189305 MB
```

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Platform Notes (Continued)

```
   node 15 cpus: 116 117 118 119 124 125 126 127 244 245 246 247 252 253 254 255
   node 15 size: 193530 MB
   node 15 free: 189310 MB
   node distances:
   node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
     0:  10  20  20  20  20  20  20  20  20  20  20  20  20  20  20  20
     1:  20  10  20  20  20  20  20  20  20  20  20  20  20  20  20  20
     2:  20  20  10  20  20  20  20  20  20  20  20  20  20  20  20  20
     3:  20  20  20  10  20  20  20  20  20  20  20  20  20  20  20  20
     4:  20  20  20  20  10  20  20  20  20  20  20  20  20  20  20  20
     5:  20  20  20  20  20  10  20  20  20  20  20  20  20  20  20  20
     6:  20  20  20  20  20  20  10  20  20  20  20  20  20  20  20  20
     7:  20  20  20  20  20  20  20  10  20  20  20  20  20  20  20  20
     8:  20  20  20  20  20  20  20  20  10  20  20  20  20  20  20  20
     9:  20  20  20  20  20  20  20  20  20  10  20  20  20  20  20  20
    10:  20  20  20  20  20  20  20  20  20  20  10  20  20  20  20  20
    11:  20  20  20  20  20  20  20  20  20  20  20  10  20  20  20  20
    12:  20  20  20  20  20  20  20  20  20  20  20  20  10  20  20  20
    13:  20  20  20  20  20  20  20  20  20  20  20  20  20  10  20  20
    14:  20  20  20  20  20  20  20  20  20  20  20  20  20  20  10  20
    15:  20  20  20  20  20  20  20  20  20  20  20  20  20  20  20  10


 From /proc/meminfo
    MemTotal:       3169357564 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
       NAME="SLES"
       VERSION="15"
       VERSION_ID="15"
       PRETTY_NAME="SUSE Linux Enterprise Server 15"
       ID="sles"
       ID_LIKE="suse"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:15"

 uname -a:
    Linux linux-xuei 4.12.14-25.25-default #1 SMP Thu Oct 25 16:07:27 UTC 2018 (d2d8b17)
    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: __user pointer sanitization
 CVE-2017-5715 (Spectre variant 2): Mitigation: Indirect Branch Restricted Speculation,
```

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Platform Notes (Continued)

```
   IBPB, IBRS_FW

   run-level 3 Dec 30 00:18

   SPEC is set to: /home/admin/benchmarks/cpu2017
     Filesystem      Type   Size   Used Avail Use% Mounted on
     /dev/sda2       btrfs  1.4T    78G  1.3T   6% /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. 0WDSL014 11/12/2018
     Memory:
      96x Samsung M393A4K40CB2-CTD 32 GB 2 rank 2666

   (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)
------------------------------------------------------------------------------
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)
```

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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,
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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,
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  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
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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  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)
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```

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Compiler Version Notes (Continued)

```
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)
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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)
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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
```

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

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

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

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Base Compiler Invocation (Continued)

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:
`-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=3`

C++ benchmarks:
`-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=3`

Fortran benchmarks:
`-xCORE-AVX512 -ipo -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:
`-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=3 -auto`

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SPEC CPU2017 Floating Point Rate Result

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Sugon

I980-G30 (Intel Xeon Platinum 8153)

SPECrate2017_fp_base =   638

SPECrate2017_fp_peak =   647

CPU2017 License: 9046
Test Sponsor: Sugon
Tested by: Sugon

Test Date: Jan-2019
Hardware Availability: Nov-2018
Software Availability: Apr-2019

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
```
-nostandard-realloc-lhs -align array32byte
```

Benchmarks using both C and C++:
```
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3
```

Benchmarks using Fortran, C, and C++:
```
-xCORE-AVX512 -ipo -O3 -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
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

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Test Date: Jan-2019
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Software Availability: Apr-2019

Peak Optimization Flags (Continued)

519.lbm_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512
-O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

538.imagick_r: -xCORE-AVX512 -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: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512
-O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

510.parest_r: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3

Fortran benchmarks:

503.bwaves_r: -xCORE-AVX512 -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 -xCORE-AVX512
-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 -xCORE-AVX512 -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 -xCORE-AVX512
-O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

526.blender_r: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3

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SPEC CPU2017 Floating Point Rate Result

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Sugon

I980-G30 (Intel Xeon Platinum 8153)

SPECrate2017_fp_base = 638

SPECrate2017_fp_peak = 647

CPU2017 License: 9046
Test Sponsor: Sugon
Tested by: Sugon

Test Date: Jan-2019
Hardware Availability: Nov-2018
Software Availability: Apr-2019

Peak Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX512 -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

http://www.spec.org/cpu2017/flags/Intel-ic19.0-official-linux64.2019-01-15.html
http://www.spec.org/cpu2017/flags/Sugon-Platform-Settings-revC-I.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.0-official-linux64.2019-01-15.xml
http://www.spec.org/cpu2017/flags/Sugon-Platform-Settings-revC-I.xml

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

Tested with SPEC CPU2017 v1.0.5 on 2019-01-02 13:01:32-0500.
Report generated on 2019-02-19 11:24:29 by CPU2017 PDF formatter v6067.
Originally published on 2019-02-19.