SPEC® CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR950
(1.90 GHz, Intel Xeon Gold 5119T)

SPECrate2017_fp_base = 260
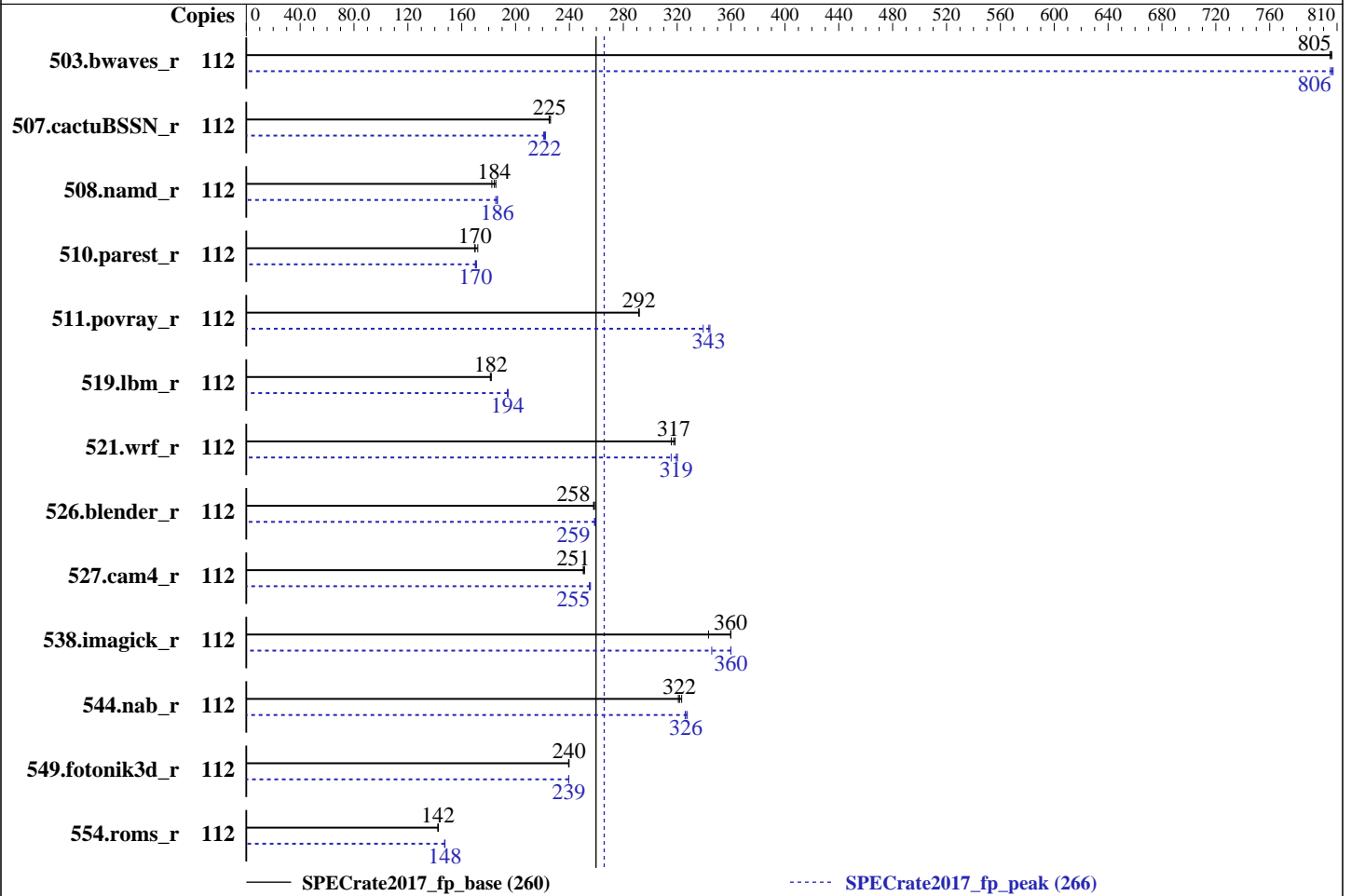
SPECrate2017_fp_peak = 266

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Jan-2018
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Copies		
503.bwaves_r	112	805 / 806
507.cactuBSSN_r	112	225 / 222
508.namd_r	112	184 / 186
510.parest_r	112	170 / 170
511.povray_r	112	292 / 343
519.lbm_r	112	182 / 194
521.wrf_r	112	317 / 319
526.blender_r	112	258 / 259
527.cam4_r	112	251 / 255
538.imagick_r	112	360 / 360
544.nab_r	112	322 / 326
549.fotonik3d_r	112	240 / 239
554.roms_r	112	142 / 148

SPECrate2017_fp_base (260)   SPECrate2017_fp_peak (266)

Hardware

CPU Name: Intel Xeon Gold 5119T
 Max MHz.: 3200
 Nominal: 1900
Enabled: 56 cores, 4 chips, 2 threads/core
Orderable: 2,4 chips
Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 19.25 MB I+D on chip per chip
 Other: None
Memory: 1536 GB (48 x 32 GB 2Rx4 PC4-2666V-R, running at 2400)
Storage: 800 GB tmpfs
Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP2 (x86_64)
  Kernel 4.4.21-69-default
Compiler: C/C++: Version 18.0.0.128 of Intel C/C++
  Compiler for Linux;
  Fortran: Version 18.0.0.128 of Intel Fortran
  Compiler for Linux
Parallel: No
Firmware: Lenovo BIOS Version PSE109O 1.11 released Dec-2017
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: None

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Results Table

Benchmark	Base						Peak					
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	112	1393	806	**1395**	**805**	1395	805	112	1395	805	**1393**	**806**	1392	807
507.cactuBSSN_r	112	628	226	**630**	**225**	630	225	112	638	222	**640**	**222**	642	221
508.namd_r	112	583	182	574	185	**577**	**184**	112	571	186	**571**	**186**	574	185
510.parest_r	112	1704	172	**1724**	**170**	1726	170	112	1714	171	**1719**	**170**	1722	170
511.povray_r	112	897	292	896	292	**897**	**292**	112	**761**	**343**	771	339	760	344
519.lbm_r	112	651	181	649	182	**650**	**182**	112	**608**	**194**	609	194	607	194
521.wrf_r	112	788	318	**790**	**317**	795	316	112	**786**	**319**	795	316	784	320
526.blender_r	112	661	258	**660**	**258**	660	259	112	**659**	**259**	658	259	660	259
527.cam4_r	112	780	251	**781**	**251**	783	250	112	769	255	**768**	**255**	766	256
538.imagick_r	112	**774**	**360**	774	360	811	343	112	774	360	806	346	**774**	**360**
544.nab_r	112	587	321	583	323	**586**	**322**	112	578	326	**578**	**326**	576	328
549.fotonik3d_r	112	1821	240	**1821**	**240**	1823	239	112	1822	240	**1823**	**239**	1823	239
554.roms_r	112	**1249**	**142**	1248	143	1251	142	112	**1206**	**148**	1206	148	1209	147

SPECrate2017_fp_base =	**260**
SPECrate2017_fp_peak =	**266**

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"
Tmpfs filesystem can be set with:
 mount -t tmpfs -o size=800g tmpfs /home
Process tuning setting:
 echo 50000     > /proc/sys/kernel/sched_cfs_bandwidth_slice_us
 echo 240000000 > /proc/sys/kernel/sched_latency_ns
 echo 5000000   > /proc/sys/kernel/sched_migration_cost_ns
 echo 100000000 > /proc/sys/kernel/sched_min_granularity_ns
 echo 150000000 > /proc/sys/kernel/sched_wakeup_granularity_ns
 echo 0 > /proc/sys/kernel/numa_balancing
```

General Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017.1.0.2.ic18.0/lib/ia32:/home/cpu2017.1.0.2.ic18.0/lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017.1.0.2.ic18.0/je5.0.1-32:/home/cpu2017.1.0.2.ic18.0/je5.0.1-64"
```

(Continued on next page)

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General Notes (Continued)

```
  Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
  memory using Redhat Enterprise Linux 7.4
  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>
No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
No: 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.
No: 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.


This benchmark result is intended to provide perspective on
past performance using the historical hardware and/or
software described on this result page.


The system as described on this result page was formerly
generally available.  At the time of this publication, it may
not be shipping, and/or may not be supported, and/or may fail
to meet other tests of General Availability described in the
SPEC OSG Policy document, http://www.spec.org/osg/policy.html


This measured result may not be representative of the result
that would be measured were this benchmark run with hardware
and software available as of the publication date.
```

Platform Notes

```
BIOS configuration:
Choose Operating Mode set to Maximum Performance
SNC set to Enable
MONITORMWAIT set to Enable
Execute Disable Bit set to Disable
Intel Virtualization Technology set to Disable
DCA set to Enable
DCU Streamer Prefetcher set to Enable
  Sysinfo program /home/cpu2017.1.0.2.ic18.0/bin/sysinfo
  Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
  running on linux-ciok Tue Jan  2 09:32:08 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
```

(Continued on next page)

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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) Gold 5119T CPU @ 1.90GHz
      4  "physical id"s (chips)
      112 "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 : 14
      siblings  : 28
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14

From lscpu:
      Architecture:          x86_64
      CPU op-mode(s):        32-bit, 64-bit
      Byte Order:            Little Endian
      CPU(s):                112
      On-line CPU(s) list:   0-111
      Thread(s) per core:    2
      Core(s) per socket:    14
      Socket(s):             4
      NUMA node(s):          8
      Vendor ID:             GenuineIntel
      CPU family:            6
      Model:                 85
      Model name:            Intel(R) Xeon(R) Gold 5119T CPU @ 1.90GHz
      Stepping:              4
      CPU MHz:               1895.557
      BogoMIPS:              3791.11
      Virtualization:        VT-x
      L1d cache:             32K
      L1i cache:             32K
      L2 cache:              1024K
      L3 cache:              19712K
      NUMA node0 CPU(s):     0-3,7-9,56-59,63-65
      NUMA node1 CPU(s):     4-6,10-13,60-62,66-69
      NUMA node2 CPU(s):     14-17,21-23,70-73,77-79
      NUMA node3 CPU(s):     18-20,24-27,74-76,80-83
      NUMA node4 CPU(s):     28-31,35-37,84-87,91-93
      NUMA node5 CPU(s):     32-34,38-41,88-90,94-97
      NUMA node6 CPU(s):     42-45,49-51,98-101,105-107
      NUMA node7 CPU(s):     46-48,52-55,102-104,108-111
      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
```

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Platform Notes (Continued)

```
    aperfmperf eagerfpu pni pclmulqdq dtes64 monitor 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 ida arat epb pln pts dtherm intel_pt
    tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2
    erms invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd
    avx512bw avx512vl xsaveopt xsavec xgetbv1 cqm_llc cqm_occup_llc

 /proc/cpuinfo cache data
    cache size : 19712 KB

 From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
 physical chip.
   available: 8 nodes (0-7)
   node 0 cpus: 0 1 2 3 7 8 9 56 57 58 59 63 64 65
   node 0 size: 192979 MB
   node 0 free: 187021 MB
   node 1 cpus: 4 5 6 10 11 12 13 60 61 62 66 67 68 69
   node 1 size: 193521 MB
   node 1 free: 192951 MB
   node 2 cpus: 14 15 16 17 21 22 23 70 71 72 73 77 78 79
   node 2 size: 193521 MB
   node 2 free: 192990 MB
   node 3 cpus: 18 19 20 24 25 26 27 74 75 76 80 81 82 83
   node 3 size: 193521 MB
   node 3 free: 192987 MB
   node 4 cpus: 28 29 30 31 35 36 37 84 85 86 87 91 92 93
   node 4 size: 193521 MB
   node 4 free: 184521 MB
   node 5 cpus: 32 33 34 38 39 40 41 88 89 90 94 95 96 97
   node 5 size: 193521 MB
   node 5 free: 192999 MB
   node 6 cpus: 42 43 44 45 49 50 51 98 99 100 101 105 106 107
   node 6 size: 193521 MB
   node 6 free: 193015 MB
   node 7 cpus: 46 47 48 52 53 54 55 102 103 104 108 109 110 111
   node 7 size: 193516 MB
   node 7 free: 193011 MB
   node distances:
   node   0    1    2    3    4    5    6    7
     0:  10   11   31   31   21   21   21   21
     1:  11   10   31   31   21   21   21   21
     2:  31   31   10   11   21   21   21   21
     3:  31   31   11   10   21   21   21   21
     4:  21   21   21   21   10   11   31   31
     5:  21   21   21   21   11   10   31   31
     6:  21   21   21   21   31   31   10   11
     7:  21   21   21   21   31   31   11   10
```

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Platform Notes (Continued)

```
From /proc/meminfo
   MemTotal:        1584766272 kB
   HugePages_Total:          0
   Hugepagesize:          2048 kB

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 2
      # 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-SP2"
      VERSION_ID="12.2"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
   Linux linux-ciok 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016 (9464f67)
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 2 09:30

SPEC is set to: /home/cpu2017.1.0.2.ic18.0
   Filesystem      Type   Size  Used Avail Use% Mounted on
   tmpfs           tmpfs  800G   11G  790G   2% /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 Lenovo -[PSE109O-1.11]- 12/12/2017
  Memory:
   48x NO DIMM NO DIMM
   48x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666, configured at 2400

(End of data from sysinfo program)
```

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Compiler Version Notes

```
==============================================================================
  CC   519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base)
------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
  CC   519.lbm_r(peak) 544.nab_r(peak)
------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
  CXXC 508.namd_r(base) 510.parest_r(base)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
  CXXC 508.namd_r(peak) 510.parest_r(peak)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
  CC   511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
  CC   511.povray_r(peak) 526.blender_r(peak)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
```

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Compiler Version Notes (Continued)

```
  FC   507.cactuBSSN_r(base)
-------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
FC   507.cactuBSSN_r(peak)
-------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
 FC   503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)
-------------------------------------------------------------------------------
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
FC   554.roms_r(peak)
-------------------------------------------------------------------------------
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
 CC   521.wrf_r(base) 527.cam4_r(base)
-------------------------------------------------------------------------------
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
 CC   521.wrf_r(peak) 527.cam4_r(peak)
-------------------------------------------------------------------------------
```

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```
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
-----------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc

Benchmarks using both C and C++:
icpc icc

Benchmarks using Fortran, C, and C++:
icpc icc ifort

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

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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 -nostandard-realloc-lhs -align array32byte
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

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 -nostandard-realloc-lhs -align array32byte
```

Base Other Flags

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

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

Fortran benchmarks:
```
-m64
```

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

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

Benchmarks using Fortran, C, and C++:
```
-m64 -std=c11
```

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Peak Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`ifort icc`

Benchmarks using both C and C++:
`icpc icc`

Benchmarks using Fortran, C, and C++:
`icpc icc ifort`

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

544.nab_r: Same as 519.lbm_r

C++ benchmarks:
`-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`

Fortran benchmarks:

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR950
(1.90 GHz, Intel Xeon Gold 5119T)

SPECrate2017_fp_base = 260

SPECrate2017_fp_peak = 266

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jan-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

Peak Optimization Flags (Continued)

503.bwaves_r: `-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=3`
`-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-AVX2 -O3`
`-no-prec-div -qopt-prefetch -ffinite-math-only`
`-qopt-mem-layout-trans=3 -nostandard-realloc-lhs`
`-align array32byte`

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 -nostandard-realloc-lhs -align array32byte`

Benchmarks using both C 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`

Benchmarks using Fortran, C, 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 -nostandard-realloc-lhs -align array32byte`

Peak Other Flags

C benchmarks:
`-m64 -std=c11`

C++ benchmarks:
`-m64`

Fortran benchmarks:
`-m64`

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

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

(Continued on next page)

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Peak Other Flags (Continued)

Benchmarks using Fortran, C, and C++:
`-m64 -std=c11`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-A.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-A.xml`

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

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