SPEC CPU®2017 Floating Point Rate Result

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Supermicro
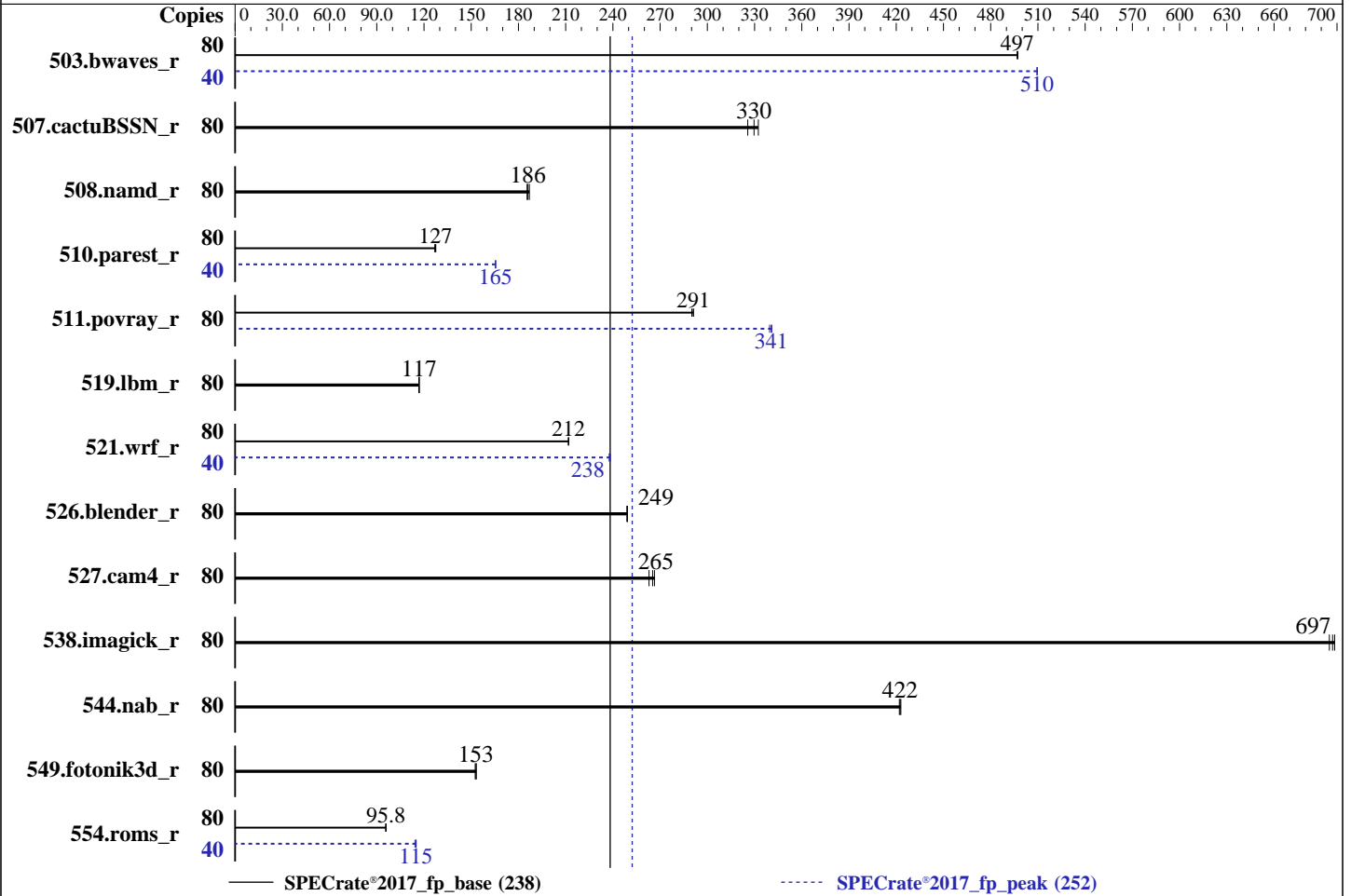
SYS-2029BT-HNC0R
(X11DPT-B , Intel Xeon Gold 6248)

SPECrate®2017_fp_base = 238

SPECrate®2017_fp_peak = 252

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Jun-2020

Hardware Availability: Sep-2019

Software Availability: Apr-2020

Copies	
503.bwaves_r	80 — 497
	40 — 510
507.cactuBSSN_r	80 — 330
508.namd_r	80 — 186
510.parest_r	80 — 127
	40 — 165
511.povray_r	80 — 291
	80 — 341
519.lbm_r	80 — 117
521.wrf_r	80 — 212
	40 — 238
526.blender_r	80 — 249
527.cam4_r	80 — 265
538.imagick_r	80 — 697
544.nab_r	80 — 422
549.fotonik3d_r	80 — 153
554.roms_r	80 — 95.8
	40 — 115

SPECrate®2017_fp_base (238)   SPECrate®2017_fp_peak (252)

Hardware

CPU Name: Intel Xeon Gold 6248
  Max MHz: 3900
  Nominal: 2500
Enabled: 40 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 32 KB D on chip per core
  L2: 1 MB I+D on chip per core
  L3: 27.5 MB I+D on chip per chip
  Other: None
Memory: 384 GB (12 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)
Storage: 1 x 400 GB NVMe SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 8.2
    Kernel 4.18.0-193.el8.x86_64
Compiler: C/C++: Version 19.1.1.217 of Intel C/C++ Build 20200306
    Compiler for Linux;
    Fortran: Version 19.1.1.217 of Intel Fortran Build 20200306
    Compiler for Linux
Parallel: No
Firmware: Version 3.3 released Feb-2020
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS set to prefer performance at the cost of additional power usage

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

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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	80	**1614**	**497**	1615	497	1613	497	40	787	510	787	509	**787**	**510**
507.cactuBSSN_r	80	**307**	**330**	305	332	311	326	80	**307**	**330**	305	332	311	326
508.namd_r	80	407	187	**408**	**186**	410	185	80	407	187	**408**	**186**	410	185
510.parest_r	80	1641	127	**1644**	**127**	1650	127	40	**633**	**165**	633	165	632	166
511.povray_r	80	644	290	642	291	**642**	**291**	80	548	341	550	340	**549**	**341**
519.lbm_r	80	**721**	**117**	721	117	722	117	80	**721**	**117**	721	117	722	117
521.wrf_r	80	**846**	**212**	847	212	845	212	40	**377**	**238**	376	238	377	238
526.blender_r	80	489	249	489	249	**489**	**249**	80	489	249	489	249	**489**	**249**
527.cam4_r	80	**528**	**265**	532	263	525	266	80	**528**	**265**	532	263	525	266
538.imagick_r	80	286	695	**285**	**697**	285	698	80	286	695	**285**	**697**	285	698
544.nab_r	80	319	422	318	423	**319**	**422**	80	319	422	318	423	**319**	**422**
549.fotonik3d_r	80	2035	153	**2037**	**153**	2044	153	80	2035	153	**2037**	**153**	2044	153
554.roms_r	80	**1327**	**95.8**	1328	95.7	1326	95.9	40	556	114	553	115	**553**	**115**
SPECrate®2017_fp_base =	**238**												
SPECrate®2017_fp_peak =	**252**												

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

Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler.
The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux
The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux

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"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2017/lib/intel64:/root/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"

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

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CPU2017 License: 001176		**Test Date:**	Jun-2020
Test Sponsor:	Supermicro	**Hardware Availability:**	Sep-2019
Tested by:	Supermicro	**Software Availability:**	Apr-2020

General Notes

```
Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM
memory using Redhat Enterprise Linux 8.0
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>
NA: 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.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS Settings:
Power Technology = Custom
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Extreme Performance
SNC = Enable
Stale AtoS = Disable
IMC Interleaving = 1-way Interleave
Patrol Scrub = Disable

 Sysinfo program /root/cpu2017/bin/sysinfo
 Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
 running on localhost.localdomain Fri Jun 19 11:50:31 2020

 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) Gold 6248 CPU @ 2.50GHz
       2  "physical id"s (chips)
       80 "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 : 20
       siblings  : 40
       physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
```

(Continued on next page)

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Platform Notes (Continued)

```
      physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

  From lscpu:
      Architecture:          x86_64
      CPU op-mode(s):        32-bit, 64-bit
      Byte Order:            Little Endian
      CPU(s):                80
      On-line CPU(s) list:   0-79
      Thread(s) per core:    2
      Core(s) per socket:    20
      Socket(s):             2
      NUMA node(s):          4
      Vendor ID:             GenuineIntel
      CPU family:            6
      Model:                 85
      Model name:            Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz
      Stepping:              6
      CPU MHz:               3199.987
      CPU max MHz:           3900.0000
      CPU min MHz:           1000.0000
      BogoMIPS:              5000.00
      Virtualization:        VT-x
      L1d cache:             32K
      L1i cache:             32K
      L2 cache:              1024K
      L3 cache:              28160K
      NUMA node0 CPU(s):     0-2,5,6,10-12,15,16,40-42,45,46,50-52,55,56
      NUMA node1 CPU(s):     3,4,7-9,13,14,17-19,43,44,47-49,53,54,57-59
      NUMA node2 CPU(s):     20-22,25,26,30-32,35,36,60-62,65,66,70-72,75,76
      NUMA node3 CPU(s):     23,24,27-29,33,34,37-39,63,64,67-69,73,74,77-79
      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
  intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced 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 pku ospke avx512_vnni md_clear flush_l1d arch_capabilities

  /proc/cpuinfo cache data
     cache size : 28160 KB

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

(Continued on next page)

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Test Date: Jun-2020
Hardware Availability: Sep-2019
Software Availability: Apr-2020

Platform Notes (Continued)

```
   available: 4 nodes (0-3)
   node 0 cpus: 0 1 2 5 6 10 11 12 15 16 40 41 42 45 46 50 51 52 55 56
   node 0 size: 95346 MB
   node 0 free: 84384 MB
   node 1 cpus: 3 4 7 8 9 13 14 17 18 19 43 44 47 48 49 53 54 57 58 59
   node 1 size: 96735 MB
   node 1 free: 88213 MB
   node 2 cpus: 20 21 22 25 26 30 31 32 35 36 60 61 62 65 66 70 71 72 75 76
   node 2 size: 96763 MB
   node 2 free: 88342 MB
   node 3 cpus: 23 24 27 28 29 33 34 37 38 39 63 64 67 68 69 73 74 77 78 79
   node 3 size: 96762 MB
   node 3 free: 88412 MB
   node distances:
   node   0   1   2   3
     0:  10  11  21  21
     1:  11  10  21  21
     2:  21  21  10  11
     3:  21  21  11  10

 From /proc/meminfo
    MemTotal:       394863148 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
      NAME="Red Hat Enterprise Linux"
      VERSION="8.2 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="8.2"
      PLATFORM_ID="platform:el8"
      PRETTY_NAME="Red Hat Enterprise Linux 8.2 (Ootpa)"
      ANSI_COLOR="0;31"
    redhat-release: Red Hat Enterprise Linux release 8.2 (Ootpa)
    system-release: Red Hat Enterprise Linux release 8.2 (Ootpa)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:8.2:ga

 uname -a:
    Linux localhost.localdomain 4.18.0-193.el8.x86_64 #1 SMP Fri Mar 27 14:35:58 UTC 2020
    x86_64 x86_64 x86_64 GNU/Linux

 Kernel self-reported vulnerability status:

 itlb_multihit:                         KVM: Mitigation: Split huge pages
 CVE-2018-3620 (L1 Terminal Fault):     Not affected
```

(Continued on next page)

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Platform Notes (Continued)

```
Microarchitectural Data Sampling:        Not affected
CVE-2017-5754 (Meltdown):                Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled
                                          via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):        Mitigation: usercopy/swapgs barriers and __user
                                          pointer sanitization
CVE-2017-5715 (Spectre variant 2):        Mitigation: Enhanced IBRS, IBPB: conditional,
                                          RSB filling
tsx_async_abort:                          Mitigation: Clear CPU buffers; SMT vulnerable


run-level 3 Jun 19 03:53


SPEC is set to: /root/cpu2017
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p4 xfs   367G   61G  307G  17% /


From /sys/devices/virtual/dmi/id
    BIOS:    American Megatrends Inc. 3.3 02/22/2020
    Vendor:  Supermicro
    Product: Super Server
    Serial:  0123456789


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.
   Memory:
    12x NO DIMM NO DIMM
    12x SK Hynix HMA84GR7CJR4N-XN 32 GB 2 rank 3200


(End of data from sysinfo program)
Sysinfo incorrectly parsed dmidecode output. Configured memory speed is 2933.
```

Compiler Version Notes

```
==============================================================================
C               | 519.lbm_r(base, peak) 538.imagick_r(base, peak)
                | 544.nab_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++             | 508.namd_r(base, peak) 510.parest_r(base, peak)
```

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CPU2017 License: 001176　　　　　　　　　　　　　　　　　　　　**Test Date:**　　Jun-2020
Test Sponsor:　Supermicro　　　　　　　　　　　　　　　　**Hardware Availability:** Sep-2019
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Compiler Version Notes (Continued)

```
--------------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C++, C           | 511.povray_r(base) 526.blender_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C++, C           | 511.povray_r(peak)
--------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
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Compiler Version Notes (Continued)

```
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
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Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
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Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
Fortran         | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)
                | 554.roms_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------


================================================================================
Fortran, C      | 521.wrf_r(peak)
--------------------------------------------------------------------------------
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Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
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Compiler Version Notes (Continued)

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Fortran, C       | 521.wrf_r(base) 527.cam4_r(base, peak)
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------------------------------------------------------------------------------


==============================================================================
Fortran, C       | 521.wrf_r(peak)
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Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 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

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CPU2017 License:	001176	**Test Date:**	Jun-2020
Test Sponsor:	Supermicro	**Hardware Availability:**	Sep-2019
Tested by:	Supermicro	**Software Availability:**	Apr-2020

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:
`-m64 -qnextgen -std=c11`
`-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
`-fuse-ld=gold -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

C++ benchmarks:
`-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries`
`-Wl,-z,muldefs -fuse-ld=gold -xCORE-AVX512 -Ofast -ffast-math -flto`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Fortran benchmarks:
`-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
`-fuse-ld=gold -xCORE-AVX512 -O3 -ipo -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles`
`-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte`
`-auto -mbranches-within-32B-boundaries`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Benchmarks using both Fortran and C:
`-m64 -qnextgen -std=c11`
`-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
`-fuse-ld=gold -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div`
`-qopt-prefetch -ffinite-math-only`
`-qopt-multiple-gather-scatter-by-shuffles -nostandard-realloc-lhs`

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SPEC CPU®2017 Floating Point Rate Result

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Supermicro

SYS-2029BT-HNC0R
(X11DPT-B , Intel Xeon Gold 6248)

SPECrate®2017_fp_base = 238

SPECrate®2017_fp_peak = 252

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

Test Date: Jun-2020
Hardware Availability: Sep-2019
Software Availability: Apr-2020

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
```
-align array32byte -auto -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using both C and C++:
```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-fuse-ld=gold -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-fuse-ld=gold -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div
-qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles -nostandard-realloc-lhs
-align array32byte -auto -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

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
```

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Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

 519.lbm_r: basepeak = yes

 538.imagick_r: basepeak = yes

 544.nab_r: basepeak = yes

C++ benchmarks:

 508.namd_r: basepeak = yes

 510.parest_r: -m64 -qnextgen
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -fuse-ld=gold -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc

Fortran benchmarks:

 503.bwaves_r: -m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -fuse-ld=gold -xCORE-AVX512 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

 549.fotonik3d_r: basepeak = yes

 554.roms_r: Same as 503.bwaves_r

Benchmarks using both Fortran and C:

 521.wrf_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-nostandard-realloc-lhs -align array32byte -auto

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Supermicro

SYS-2029BT-HNC0R
(X11DPT-B , Intel Xeon Gold 6248)

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CPU2017 License: 001176	**Test Date:** Jun-2020
Test Sponsor: Supermicro	**Hardware Availability:** Sep-2019
Tested by: Supermicro	**Software Availability:** Apr-2020

Peak Optimization Flags (Continued)

521.wrf_r (continued):
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CLX-revG.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CLX-revG.xml

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

Tested with SPEC CPU®2017 v1.1.0 on 2020-06-19 14:50:31-0400.
Report generated on 2020-07-21 13:18:03 by CPU2017 PDF formatter v6255.
Originally published on 2020-07-21.