



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Altos Computing Inc.

SPECrate®2017_fp_base = 129

BrainSphere R389 F4 (Intel Xeon Silver 4210R)

SPECrate®2017_fp_peak = 133

CPU2017 License: 97

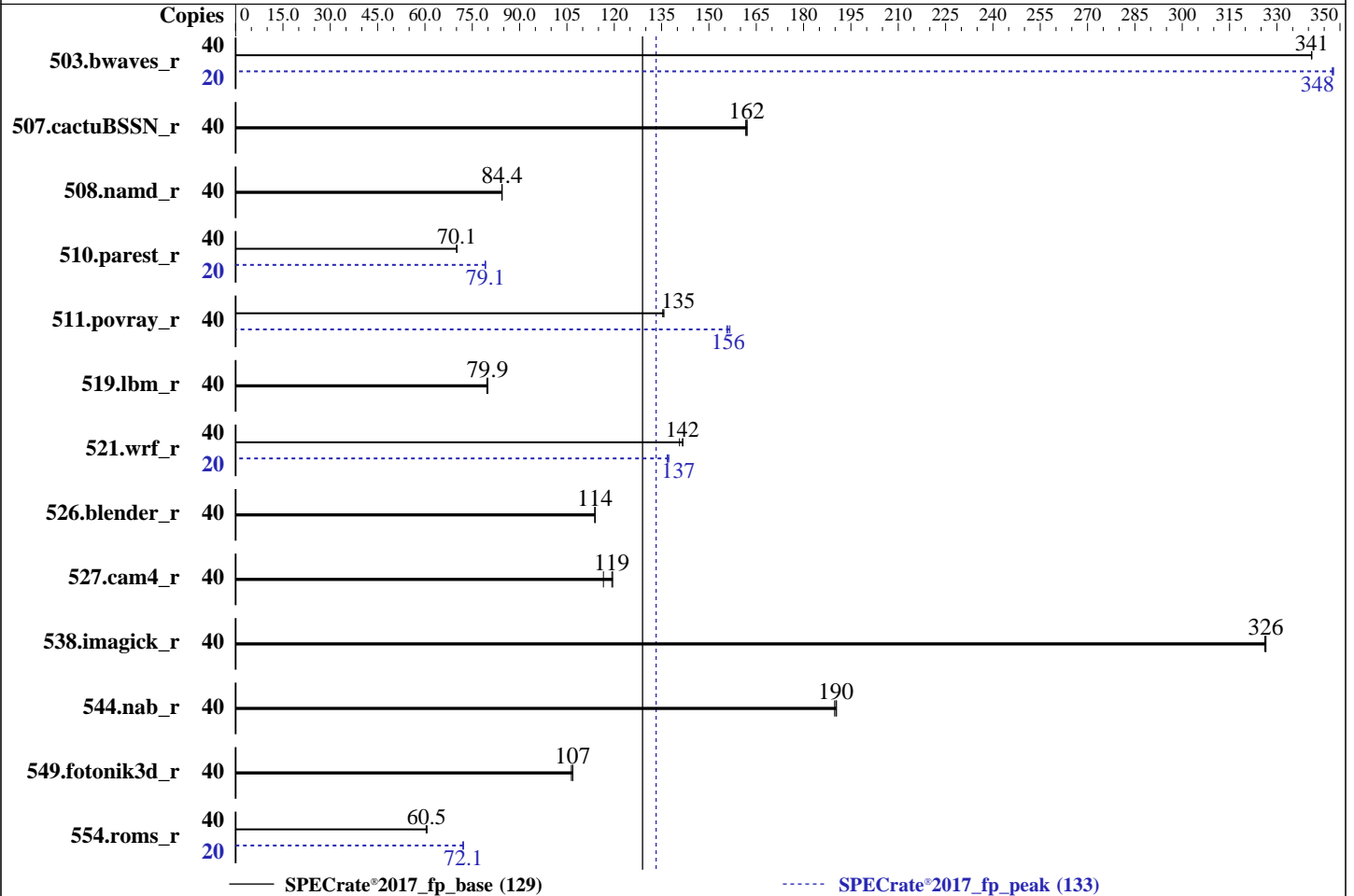
Test Date: Aug-2020

Test Sponsor: Altos Computing Inc.

Hardware Availability: Feb-2020

Tested by: Altos Computing Inc.

Software Availability: Apr-2020



Hardware

CPU Name: Intel Xeon Silver 4210R
 Max MHz: 3200
 Nominal: 2400
 Enabled: 20 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: 13.75 MB I+D on chip per chip
 Other: None
 Memory: 384 GB (24 x 16 GB 1Rx4 PC4-2933V-R, running at 2400)
 Storage: 1 x 480 GB SATA SSD
 Other: None

Software

OS: Red Hat Enterprise Linux release 8.1 4.18.0-147.el8.x86_64
 Compiler: C/C++: Version 19.1.1.217 of Intel C/C++ Compiler Build 20200306 for Linux;
 Fortran: Version 19.1.1.217 of Intel Fortran Compiler Build 20200306 for Linux
 Parallel: No
 Firmware: Version R11 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



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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	40	<u>1176</u>	<u>341</u>	1176	341	1176	341	20	577	348	<u>577</u>	<u>348</u>	576	348
507.cactuBSSN_r	40	313	162	312	162	<u>313</u>	<u>162</u>	40	313	162	312	162	<u>313</u>	<u>162</u>
508.namd_r	40	450	84.4	450	84.5	<u>450</u>	<u>84.4</u>	40	450	84.4	450	84.5	<u>450</u>	<u>84.4</u>
510.parest_r	40	1492	70.1	1494	70.1	<u>1493</u>	<u>70.1</u>	20	<u>661</u>	<u>79.1</u>	661	79.1	661	79.2
511.povray_r	40	<u>690</u>	<u>135</u>	688	136	690	135	40	600	156	596	157	<u>598</u>	<u>156</u>
519.lbm_r	40	530	79.6	528	79.9	<u>528</u>	<u>79.9</u>	40	530	79.6	528	79.9	<u>528</u>	<u>79.9</u>
521.wrf_r	40	<u>633</u>	<u>142</u>	637	141	632	142	20	326	137	328	137	<u>327</u>	<u>137</u>
526.blender_r	40	<u>535</u>	<u>114</u>	535	114	534	114	40	<u>535</u>	<u>114</u>	535	114	534	114
527.cam4_r	40	<u>587</u>	<u>119</u>	600	117	585	120	40	<u>587</u>	<u>119</u>	600	117	585	120
538.imagick_r	40	305	326	305	327	<u>305</u>	<u>326</u>	40	305	326	305	327	<u>305</u>	<u>326</u>
544.nab_r	40	353	190	<u>354</u>	<u>190</u>	355	190	40	353	190	<u>354</u>	<u>190</u>	355	190
549.fotonik3d_r	40	1465	106	1459	107	<u>1459</u>	<u>107</u>	40	1465	106	1459	107	<u>1459</u>	<u>107</u>
554.roms_r	40	<u>1051</u>	<u>60.5</u>	1053	60.4	1048	60.7	20	<u>441</u>	<u>72.1</u>	441	72.1	440	72.2

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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 = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOCONF = "retain:true"



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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 Configuration:

Power Policy Quick Settings set to Best Performance

IMC set to 1-way interleave

Sub_NUMA Cluster set to enabled

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011

running on localhost.localdomain Mon Aug 17 10:15:23 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) Silver 4210R CPU @ 2.40GHz
```

```
2 "physical id"s (chips)
```

```
40 "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 : 10
```

```
siblings : 20
```

```
physical 0: cores 0 1 2 3 4 8 9 10 11 12
```

```
physical 1: cores 0 1 2 3 4 8 9 10 11 12
```

From lscpu:

```
Architecture: x86_64
```

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Platform Notes (Continued)

```

CPU op-mode(s):      32-bit, 64-bit
Byte Order:          Little Endian
CPU(s):              40
On-line CPU(s) list: 0-39
Thread(s) per core:  2
Core(s) per socket: 10
Socket(s):           2
NUMA node(s):        2
Vendor ID:           GenuineIntel
CPU family:           6
Model:               85
Model name:          Intel(R) Xeon(R) Silver 4210R CPU @ 2.40GHz
Stepping:            7
CPU MHz:             2882.661
CPU max MHz:         3200.0000
CPU min MHz:         1000.0000
BogoMIPS:            4800.00
Virtualization:      VT-x
L1d cache:           32K
L1i cache:           32K
L2 cache:            1024K
L3 cache:            14080K
NUMA node0 CPU(s):  0-9,20-29
NUMA node1 CPU(s):  10-19,30-39
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
aperfperf 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 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 bmil 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 avx512_vnni md_clear flush_lld arch_capabilities

```

```

/proc/cpuinfo cache data
cache size : 14080 KB

```

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

```

available: 2 nodes (0-1)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 20 21 22 23 24 25 26 27 28 29
node 0 size: 191853 MB
node 0 free: 165093 MB
node 1 cpus: 10 11 12 13 14 15 16 17 18 19 30 31 32 33 34 35 36 37 38 39

```

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Platform Notes (Continued)

```
node 1 size: 193505 MB
node 1 free: 171925 MB
node distances:
node  0  1
  0:  10  21
  1:  21  10
```

From /proc/meminfo

```
MemTotal:      394608288 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

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

```
os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.1 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.1"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.1 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.1:ga
```

uname -a:

```
Linux localhost.localdomain 4.18.0-147.el8.x86_64 #1 SMP Thu Sep 26 15:52:44 UTC 2019
x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

```
CVE-2018-3620 (L1 Terminal Fault):      Not affected
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/swaps barriers and __user
pointer sanitization
CVE-2017-5715 (Spectre variant 2):      Mitigation: Enhanced IBRS, IBPB: conditional,
RSB filling
```

run-level 3 Aug 14 02:33

SPEC is set to: /home/cpu2017

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs  392G   78G  314G  20% /home
```

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Platform Notes (Continued)

```

From /sys/devices/virtual/dmi/id
  BIOS:      GIGABYTE R11 02/25/2020
  Vendor:    ALTOS
  Product:   BrainSphere R389 F4
  Product Family: Server
  Serial:    GIGBN8521A0007

```

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:
  24x Samsung M393A2K40CB2-CVF 16 GB 1 rank 2933

```

(End of data from sysinfo program)

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)
=====

```

```

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.
=====

```

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Compiler Version Notes (Continued)

=====
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.
=====

=====
C++, C | 511.povray_r(base) 526.blender_r(base, peak)
=====

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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)
=====

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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.
=====

=====
C++, C, Fortran | 507.cactuBSSN_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.
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)

```
=====
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)
=====
```

```
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 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

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

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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)
=====
```

```
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,
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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:

```
-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
-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
```

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SPEC CPU®2017 Floating Point Rate Result

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Altos Computing Inc.

SPECrate®2017_fp_base = 129

BrainSphere R389 F4 (Intel Xeon Silver 4210R)

SPECrate®2017_fp_peak = 133

CPU2017 License: 97

Test Sponsor: Altos Computing Inc.

Tested by: Altos Computing Inc.

Test Date: Aug-2020

Hardware Availability: Feb-2020

Software Availability: Apr-2020

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

`-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`

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:

(Continued on next page)



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Peak Optimization Flags (Continued)

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  
-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++:

(Continued on next page)



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Peak Optimization Flags (Continued)

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-ic19.1ul-official-linux64_revA.html

<http://www.spec.org/cpu2017/flags/Altos-Platform-Settings-V1.0-revA.html>

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/Intel-ic19.1ul-official-linux64_revA.xml

<http://www.spec.org/cpu2017/flags/Altos-Platform-Settings-V1.0-revA.xml>

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