# SPEC CPU®2017 Floating Point Rate Result

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## Dell Inc.

PowerEdge C6420 (Intel Xeon Silver 4214R, 2.40 GHz)

SPECrate®2017_fp_base = 145

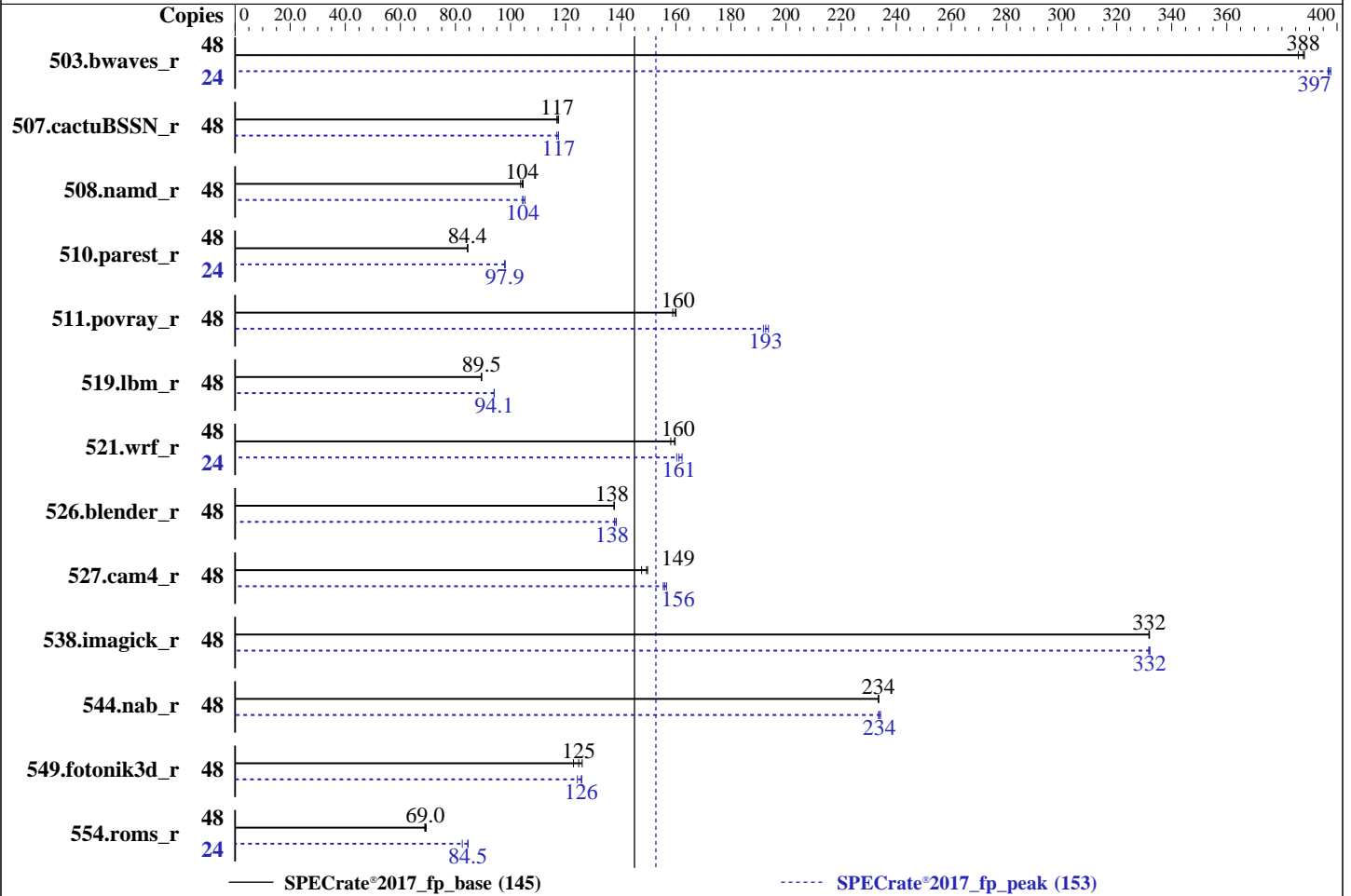SPECrate®2017_fp_peak = 153

**CPU2017 License:** 55
**Test Sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test Date:** Feb-2020
**Hardware Availability:** Feb-2019
**Software Availability:** Feb-2020

| Benchmark | Copies | base | peak |
|---|---|---|---|
| 503.bwaves_r | 48 / 24 | 388 | 397 |
| 507.cactuBSSN_r | 48 | 117 | 117 |
| 508.namd_r | 48 | 104 | 104 |
| 510.parest_r | 48 / 24 | 84.4 | 97.9 |
| 511.povray_r | 48 | 160 | 193 |
| 519.lbm_r | 48 | 89.5 | 94.1 |
| 521.wrf_r | 48 / 24 | 160 | 161 |
| 526.blender_r | 48 | 138 | 138 |
| 527.cam4_r | 48 | 149 | 156 |
| 538.imagick_r | 48 | 332 | 332 |
| 544.nab_r | 48 | 234 | 234 |
| 549.fotonik3d_r | 48 | 125 | 126 |
| 554.roms_r | 48 / 24 | 69.0 | 84.5 |

SPECrate®2017_fp_base (145)

SPECrate®2017_fp_peak (153)

## Hardware

CPU Name: Intel Xeon Silver 4214R
 Max MHz: 3500
 Nominal: 2400
Enabled: 24 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: 16.5 MB I+D on chip per chip
 Other: None
Memory: 384 GB (12 x 32 GB 2Rx8 PC4-2933V-R, running at 2400)
Storage: 1 x 480 GB SATA SSD
Other: None

## Software

OS: Ubuntu 18.04.4 LTS
 kernel 4.15.0-88-generic
Compiler: C/C++: Version 19.0.4.227 of Intel C/C++ Compiler Build 20190416 for Linux;
 Fortran: Version 19.0.4.227 of Intel Fortran Compiler Build 20190416 for Linux
Parallel: No
Firmware: Version 2.1.6 released Mar-2019
File System: ext4
System State: Run level 5 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: None
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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SPECrate®2017_fp_peak = 153

**CPU2017 License:** 55     **Test Date:** Feb-2020
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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 | 48 | **1241** | **388** | 1247 | 386 | 1240 | 388 | 24 | 607 | 397 | 605 | 398 | **606** | **397** |
| 507.cactuBSSN_r | 48 | 520 | 117 | **520** | **117** | 517 | 117 | 48 | 520 | 117 | **518** | **117** | 518 | 117 |
| 508.namd_r | 48 | 440 | 104 | 436 | 105 | **437** | **104** | 48 | 437 | 104 | 433 | 105 | **437** | **104** |
| 510.parest_r | 48 | 1487 | 84.4 | **1488** | **84.4** | 1489 | 84.4 | 24 | **641** | **97.9** | 641 | 98.0 | 641 | 97.9 |
| 511.povray_r | 48 | 700 | 160 | 705 | 159 | **701** | **160** | 48 | 584 | 192 | **582** | **193** | 579 | 194 |
| 519.lbm_r | 48 | 565 | 89.5 | **565** | **89.5** | 566 | 89.4 | 48 | 538 | 94.1 | **538** | **94.1** | 538 | 94.0 |
| 521.wrf_r | 48 | 680 | 158 | **674** | **160** | 673 | 160 | 24 | **334** | **161** | 331 | 162 | 335 | 160 |
| 526.blender_r | 48 | 531 | 138 | 531 | 138 | **531** | **138** | 48 | 528 | 138 | 531 | 138 | **531** | **138** |
| 527.cam4_r | 48 | **562** | **149** | 569 | 148 | 561 | 150 | 48 | **538** | **156** | 540 | 155 | 536 | 157 |
| 538.imagick_r | 48 | **360** | **332** | 360 | 332 | 360 | 332 | 48 | 359 | 332 | 360 | 332 | **360** | **332** |
| 544.nab_r | 48 | **346** | **234** | 346 | 233 | 346 | 234 | 48 | **345** | **234** | 345 | 234 | 346 | 234 |
| 549.fotonik3d_r | 48 | **1500** | **125** | 1523 | 123 | 1485 | 126 | 48 | 1486 | 126 | **1488** | **126** | 1505 | 124 |
| 554.roms_r | 48 | 1108 | 68.9 | 1100 | 69.3 | **1105** | **69.0** | 24 | **451** | **84.5** | 462 | 82.5 | 451 | 84.6 |
| **SPECrate®2017_fp_base =** | | **145** | | | | | | | | | | | | |
| **SPECrate®2017_fp_peak =** | | **153** | | | | | | | | | | | | |

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"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/ODM-SPECcpu2017-194/cpu2017/lib/intel64"

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5
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)

**(Continued on next page)**

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## Dell Inc.

PowerEdge C6420 (Intel Xeon Silver 4214R, 2.40 GHz)

$SPECrate®2017\_fp\_base = 145$

$SPECrate®2017\_fp\_peak = 153$

**CPU2017 License:** 55
**Test Sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test Date:** Feb-2020
**Hardware Availability:** Feb-2019
**Software Availability:** Feb-2020

## General Notes (Continued)

```
is mitigated in the system as tested and documented.
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>
```

## Platform Notes

```
BIOS settings:
Sub NUMA Cluster enabled
Virtualization Technology disabled
DCU Streamer Prefetcher disabled
System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to Autonomous
C1E disabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Performance
Memory Patrol Scrub disabled
Logical Processor enabled
CPU Interconnect Bus Link Power Management enabled
PCI ASPM L1 Link Power Management enabled

Sysinfo program /home/ODM-SPECcpu2017-194/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
running on intel-sut Fri Feb 28 06:28:38 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 4214R CPU @ 2.40GHz
      2  "physical id"s (chips)
      48 "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 : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13

From lscpu:
      Architecture:        x86_64
```

**(Continued on next page)**

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

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**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

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**Test Date:** Feb-2020

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**Software Availability:** Feb-2020

## Platform Notes (Continued)

```
        CPU op-mode(s):        32-bit, 64-bit
        Byte Order:            Little Endian
        CPU(s):                48
        On-line CPU(s) list:   0-47
        Thread(s) per core:    2
        Core(s) per socket:    12
        Socket(s):             2
        NUMA node(s):          4
        Vendor ID:             GenuineIntel
        CPU family:            6
        Model:                 85
        Model name:            Intel(R) Xeon(R) Silver 4214R CPU @ 2.40GHz
        Stepping:              7
        CPU MHz:               3026.131
        BogoMIPS:              4800.00
        Virtualization:        VT-x
        L1d cache:             32K
        L1i cache:             32K
        L2 cache:              1024K
        L3 cache:              16896K
        NUMA node0 CPU(s):     0,4,8,12,16,20,24,28,32,36,40,44
        NUMA node1 CPU(s):     1,5,9,13,17,21,25,29,33,37,41,45
        NUMA node2 CPU(s):     2,6,10,14,18,22,26,30,34,38,42,46
        NUMA node3 CPU(s):     3,7,11,15,19,23,27,31,35,39,43,47
        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 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 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority
    ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid 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 : 16896 KB

 From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
 physical chip.
    available: 4 nodes (0-3)
    node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44
    node 0 size: 95169 MB
    node 0 free: 94687 MB
    node 1 cpus: 1 5 9 13 17 21 25 29 33 37 41 45
    node 1 size: 96744 MB
```

**(Continued on next page)**

## Dell Inc.

PowerEdge C6420 (Intel Xeon Silver 4214R, 2.40 GHz)

$SPECrate®2017\_fp\_base = 145$

$SPECrate®2017\_fp\_peak = 153$

**CPU2017 License:** 55
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## Platform Notes (Continued)

```
  node 1 free: 96048 MB
  node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46
  node 2 size: 96765 MB
  node 2 free: 96142 MB
  node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47
  node 3 size: 96764 MB
  node 3 free: 96325 MB
  node distances:
  node   0   1   2   3
    0:  10  21  11  21
    1:  21  10  21  11
    2:  11  21  10  21
    3:  21  11  21  10

From /proc/meminfo
   MemTotal:       394694644 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Ubuntu 18.04.4 LTS

From /etc/*release* /etc/*version*
   debian_version: buster/sid
   os-release:
      NAME="Ubuntu"
      VERSION="18.04.4 LTS (Bionic Beaver)"
      ID=ubuntu
      ID_LIKE=debian
      PRETTY_NAME="Ubuntu 18.04.4 LTS"
      VERSION_ID="18.04"
      HOME_URL="https://www.ubuntu.com/"
      SUPPORT_URL="https://help.ubuntu.com/"

uname -a:
   Linux intel-sut 4.15.0-88-generic #88-Ubuntu SMP Tue Feb 11 20:11:34 UTC 2020 x86_64
   x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

itlb_multihit:                        KVM: Vulnerable
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/swapgs barriers and __user
```

**(Continued on next page)**

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## Platform Notes (Continued)

```
                                      pointer sanitization
  CVE-2017-5715 (Spectre variant 2):  Mitigation: Enhanced IBRS, IBPB: conditional,
                                      RSB filling
  tsx_async_abort:                    Mitigation: TSX disabled

  run-level 5 Feb 27 21:16

  SPEC is set to: /home/ODM-SPECcpu2017-194/cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      ext4  439G   50G  368G  12% /

  From /sys/devices/virtual/dmi/id
     BIOS:    Dell Inc. 2.1.6 03/04/2019
     Vendor:  Dell Inc.
     Product: PowerEdge C6420
     Product Family: PowerEdge
     Serial:  1234567

  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:
      8x 00AD00B300AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933, configured at 2400
      1x 00AD063200AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933, configured at 2400
      3x 00AD069D00AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933, configured at 2400
      4x Not Specified Not Specified

  (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 Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
  C++             | 508.namd_r(base, peak) 510.parest_r(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.4.227 Build 20190416
```

**(Continued on next page)**

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## Compiler Version Notes (Continued)

```
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C++, C          | 511.povray_r(base, peak) 526.blender_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 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 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
Fortran, C      | 521.wrf_r(base, peak) 527.cam4_r(base, peak)
--------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.0.4.227 Build 20190416
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```

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## 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
```

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-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
```

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## Base Optimization Flags (Continued)

C++ benchmarks (continued):
```
-qopt-mem-layout-trans=4
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -auto -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=4 -auto -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=4
```

Benchmarks using Fortran, C, and C++:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -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
```

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# 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=4

538.imagick_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4

544.nab_r: Same as 538.imagick_r

C++ benchmarks:

508.namd_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=4

510.parest_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4

Fortran benchmarks:

503.bwaves_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -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-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -auto -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=4 -auto -nostandard-realloc-lhs
-align array32byte

## Dell Inc.

PowerEdge C6420 (Intel Xeon Silver 4214R, 2.40 GHz)

SPECrate®2017_fp_base = 145

SPECrate®2017_fp_peak = 153

| | | | |
|---|---|---|---|
| **CPU2017 License:** 55 | | **Test Date:** | Feb-2020 |
| **Test Sponsor:** | Dell Inc. | **Hardware Availability:** | Feb-2019 |
| **Tested by:** | Dell Inc. | **Software Availability:** | Feb-2020 |

# Peak Optimization Flags (Continued)

Benchmarks using both C and C++:

511.povray_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=4

526.blender_r: –xCORE-AVX2 –ipo –O3 –no-prec-div –qopt-prefetch
–ffinite-math-only –qopt-mem-layout-trans=4

Benchmarks using Fortran, C, and C++:
–xCORE-AVX2 –ipo –O3 –no-prec-div –qopt-prefetch –ffinite-math-only
–qopt-mem-layout-trans=4 –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-ic19.0u1-official-linux64.2019-07-09.html
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE9.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.xml
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE9.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 2020-02-28 01:28:38-0500.
Report generated on 2020-05-12 14:55:38 by CPU2017 PDF formatter v6255.
Originally published on 2020-05-12.