### Dell Inc. PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

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

#### Hardware

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base = 209</th>
<th>SPECrate®2017_fp_peak = 223</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cores</strong></td>
<td><strong>Cores</strong></td>
</tr>
<tr>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>503.bwaves_r</td>
<td>507.cactuBSSN_r</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>510.parest_r</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>519.lbm_r</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>526.blender_r</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>538.imagick_r</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>549.fotonik3d_r</td>
</tr>
<tr>
<td>554.roms_r</td>
<td></td>
</tr>
</tbody>
</table>

#### Software

- **OS:** Red Hat Enterprise Linux 8.1
- **Compiler:** C/C++: Version 19.0.5.281 of Intel C/C++ Compiler for Linux;
  Fortran: Version 19.0.5.281 of Intel Fortran Compiler for Linux
- **Parallel:** No
- **Firmware:** Version 2.6.3 released Jan-2020
- **File System:** xfs
- **System State:** Run level 3 (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.

### Test Information

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

### Test Details

- **CPU Name:** Intel Xeon Gold 6238
- **Max MHz:** 3700
- **Nominal:** 2100
- **Enabled:** 44 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:** 30.25 MB I+D on chip per chip
- **Other:** None

### Memory

- **Memory:** 384 GB (12 x 32 GB 2Rx8 PC4-3200V-R, running at 2666)

### Storage

- **Storage:** 1 x 1.92 TB SATA SSD
- **Other:** None
**SPEC CPU®2017 Floating Point Rate Result**

**Dell Inc.**

PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>88</td>
<td>1909</td>
<td>462</td>
<td>1916</td>
<td>461</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>88</td>
<td>594</td>
<td>188</td>
<td>596</td>
<td>187</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>88</td>
<td>494</td>
<td>169</td>
<td>495</td>
<td>169</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>88</td>
<td>2120</td>
<td>109</td>
<td>2123</td>
<td>108</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>88</td>
<td>789</td>
<td>260</td>
<td>790</td>
<td>260</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>88</td>
<td>829</td>
<td>112</td>
<td>825</td>
<td>112</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>88</td>
<td>977</td>
<td>202</td>
<td>985</td>
<td>200</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>88</td>
<td>576</td>
<td>233</td>
<td>576</td>
<td>233</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>88</td>
<td>627</td>
<td>246</td>
<td>633</td>
<td>243</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>88</td>
<td>403</td>
<td>544</td>
<td>403</td>
<td>543</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>88</td>
<td>383</td>
<td>386</td>
<td>380</td>
<td>389</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>88</td>
<td>2257</td>
<td>152</td>
<td>2262</td>
<td>152</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>88</td>
<td>1617</td>
<td>86.5</td>
<td>1622</td>
<td>86.2</td>
</tr>
</tbody>
</table>

**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"
MALLOC_CONF = "retain:true"

**General Notes**

Binaries compiled on a system with 1x Intel Core i9-9900K CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0
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)

(Continued on next page)
## Dell Inc.

PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_peak</th>
<th>SPECrate®2017_fp_base</th>
</tr>
</thead>
<tbody>
<tr>
<td>223</td>
<td>209</td>
</tr>
</tbody>
</table>

### General Notes (Continued)

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.

Transparent Huge Pages enabled by default

Prior to runcpu invocation

Filesystem page cache synced and cleared with:

```bash
sync; echo 3>/proc/sys/vm/drop_caches
```

runcpu command invoked through numactl i.e.:

```bash
numactl --interleave=all runcpu <etc>
```

### Platform Notes

- BIOS settings:
  - Virtualization Technology 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 disabled
  - PCI ASPM L1 Link Power Management disabled
  - UPI Prefetch enabled
  - LLC Prefetch disabled
  - Dead Line LLC Alloc enabled
  - Directory AtoS disabled

- Sysinfo program

  ```bash
  /home/cpu2017/bin/sysinfo
  ```

  Rev: r6365 of 2019-08-21 295195f888a3d7edbe6e46a485a0011

  running on localhost.localdomain Sat Apr 25 22:05:55 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

  ```bash
  model name : Intel(R) Xeon(R) Gold 6238 CPU @ 2.10GHz
  2 "physical id"s (chips)
  88 "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 : 22
  siblings : 44
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
  ```

(Continued on next page)
<table>
<thead>
<tr>
<th>SPEC CPU®2017 Floating Point Rate Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
</tr>
<tr>
<td>PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)</td>
</tr>
<tr>
<td>SPECrate®2017_fp_peak = 223</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Apr-2020</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Feb-2020</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Nov-2019</td>
</tr>
</tbody>
</table>

**Platform Notes (Continued)**

physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28

From `lscpu`:

- **Architecture:** x86_64
- **CPU op-mode(s):** 32-bit, 64-bit
- **Byte Order:** Little Endian
- **CPU(s):** 88
- **On-line CPU(s) list:** 0-87
- **Thread(s) per core:** 2
- **Core(s) per socket:** 22
- **Socket(s):** 2
- **NUMA node(s):** 4
- **Vendor ID:** GenuineIntel
- **CPU family:** 6
- **Model:** 85
- **Model name:** Intel(R) Xeon(R) Gold 6238 CPU @ 2.10GHz
- **Stepping:** 7
- **CPU MHz:** 3389.232
- **CPU max MHz:** 3700.0000
- **CPU min MHz:** 1000.0000
- **BogoMIPS:** 4200.00
- **Virtualization:** VT-x
- **L1d cache:** 32K
- **L1i cache:** 32K
- **L2 cache:** 1024K
- **L3 cache:** 30976K

NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76,80,84

NUMA node1 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85

NUMA node2 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78,82,86


**Flags:**

- `fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat mpx clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpecb rdtsscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmpref pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtrnr pdcm pclid dca sse4_1 sse4_2 x2apid movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3nowprefetch cpuid_fault epb cat_l3 cdg_l3 invpcid_single intel_pipn ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bni hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl vsxveopt xsaveopt xsaves cqm_llc cqm_occupp_llc cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts pkup ospe avx512_vnni md_clear flush_l1d arch_capabilities

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

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

**Dell Inc.**

PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_peak</th>
<th>SPECrate®2017_fp_base</th>
</tr>
</thead>
<tbody>
<tr>
<td>223</td>
<td>209</td>
</tr>
</tbody>
</table>

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

**Platform Notes (Continued)**

- physical chip.
  - available: 4 nodes (0-3)
  - node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84  
  - node 0 size: 95305 MB  
  - node 0 free: 94479 MB
  - node 1 cpus: 1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85  
  - node 1 size: 96738 MB  
  - node 1 free: 95990 MB
  - node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46 50 54 58 62 66 70 74 78 82 86  
  - node 2 size: 96763 MB  
  - node 2 free: 96273 MB
  - node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47 51 55 59 63 67 71 75 79 83 87  
  - node 3 size: 96763 MB  
  - node 3 free: 95324 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: 394824104 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

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

**Dell Inc.**

PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017 fp_base = 209</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017 fp_peak = 223</td>
</tr>
</tbody>
</table>

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

---

**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

```plaintext
runtime 3 Apr 25 15:38 last=5
SPEC is set to: /home/cpu2017
```

Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
--- | --- | --- | --- | --- | --- | --- |
/dev/mapper/rhel-home | xfs | 1.7T | 20G | 1.7T | 2% | /home |

From /sys/devices/virtual/dmi/id
- **BIOS**: Dell Inc. 2.6.3 01/18/2020
- **Vendor**: Dell Inc.
- **Product**: PowerEdge R440
- **Product Family**: PowerEdge
- **Serial**: F9TD613

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 002C069D002C 36ASF4G72PZ-3G2E2 32 GB 2 rank 3200  
  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 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
C++  | 508.namd_r(base, peak) 510.parest_r(base, peak)
(Continued on next page)```
Dell Inc.
PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

SPEC CPU®2017 Floating Point Rate Result

SPECrater®2017_fp_base = 209
SPECrater®2017_fp_peak = 223

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

Test Date: Apr-2020
Hardware Availability: Feb-2020
Software Availability: Nov-2019

Compiler Version Notes (Continued)

Intel (R) C++ Intel (R) 64 Compiler for applications running on Intel (R) 64,
Version 19.0.5.281 Build 20190815
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 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel (R) C Intel (R) 64 Compiler for applications running on Intel (R) 64,
Version 19.0.5.281 Build 20190815
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 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel (R) C Intel (R) 64 Compiler for applications running on Intel (R) 64,
Version 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel (R) Fortran Intel (R) 64 Compiler for applications running on Intel (R)
64, Version 19.0.5.281 Build 20190815
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 19.0.5.281 Build 20190815
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 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel (R) C Intel (R) 64 Compiler for applications running on Intel (R) 64,
Version 19.0.5.281 Build 20190815

(Continued on next page)
## 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

```plaintext
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
```
# SPEC CPU®2017 Floating Point Rate Result

## Dell Inc.

PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base = 209</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak = 223</td>
</tr>
</tbody>
</table>

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

---

## Base Optimization Flags

C benchmarks:
- `-m64`  
- `-std=c11`  
- `-xCORE-AVX2`  
- `-ipo`  
- `-o3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-ffinite-math-only`  
- `-qopt-mem-layout-trans=4`

C++ benchmarks:
- `-m64`  
- `-xCORE-AVX2`  
- `-ipo`  
- `-o3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-ffinite-math-only`  
- `-qopt-mem-layout-trans=4`

Fortran benchmarks:
- `-m64`  
- `-xCORE-AVX2`  
- `-ipo`  
- `-o3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-ffinite-math-only`  
- `-qopt-mem-layout-trans=4`  
- `-auto`  
- `-nostandard-realloc-lhs`

Benchmarks using both Fortran and C:
- `-m64`  
- `-std=c11`  
- `-xCORE-AVX2`  
- `-ipo`  
- `-o3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-ffinite-math-only`  
- `-qopt-mem-layout-trans=4`  
- `-auto`  
- `-nostandard-realloc-lhs`

Benchmarks using both C and C++:
- `-m64`  
- `-std=c11`  
- `-xCORE-AVX2`  
- `-ipo`  
- `-o3`  
- `-no-prec-div`  
- `-qopt-prefetch`  
- `-ffinite-math-only`  
- `-qopt-mem-layout-trans=4`  
- `-auto`  
- `-nostandard-realloc-lhs`

---

## 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`

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>209</td>
<td>223</td>
</tr>
</tbody>
</table>

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

Peak Compiler Invocation (Continued)

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: -m64 -std=c11 -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: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:

508.namd_r: -m64 -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: -m64 -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4

Fortran benchmarks:

503.bwaves_r: -m64 -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -auto
-nostandard-realloc-lhs

549.fotonik3d_r: basepeak = yes

554.roms_r: -m64 -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

(Continued on next page)
Dell Inc. PowerEdge R440 (Intel Xeon Gold 6238, 2.10 GHz)

SPECrater®2017_fp_base = 209
SPECrater®2017_fp_peak = 223

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

Test Date: Apr-2020
Hardware Availability: Feb-2020
Software Availability: Nov-2019

Peak Optimization Flags (Continued)

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

Benchmarks using both C and C++:
511.povray_r: -m64 -std=c11 -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: 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

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

SPEC CPU and SPECrater are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 2020-04-25 23:05:54-0400.
Report generated on 2020-05-12 14:58:30 by CPU2017 PDF formatter v6255.
Originally published on 2020-05-12.