Dell Inc.
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

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

<table>
<thead>
<tr>
<th>Spec Test</th>
<th>Copies</th>
<th>Specrate\textsuperscript{®}2017_fp_base</th>
<th>Specrate\textsuperscript{®}2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>144</td>
<td>72</td>
<td>726</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>144</td>
<td>72</td>
<td>605</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>144</td>
<td>72</td>
<td>377</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>144</td>
<td>72</td>
<td>210</td>
</tr>
<tr>
<td>511 povray_r</td>
<td>144</td>
<td>72</td>
<td>553</td>
</tr>
<tr>
<td>519.libm_r</td>
<td>144</td>
<td>72</td>
<td>270</td>
</tr>
<tr>
<td>521. wrf_r</td>
<td>144</td>
<td>72</td>
<td>344</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>144</td>
<td>72</td>
<td>506</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>144</td>
<td>72</td>
<td>488</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>144</td>
<td>72</td>
<td>1290</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>144</td>
<td>72</td>
<td>845</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>144</td>
<td>72</td>
<td>228</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>144</td>
<td>72</td>
<td>158</td>
</tr>
</tbody>
</table>

**Software**

- **OS:** Red Hat Enterprise Linux 8.2 (Ootpa)
- **Compiler:** C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;
  Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;
  C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux
- **Firmware:** No
- **File System:** tmpfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage.

---

**Hardware**

- **CPU Name:** Intel Xeon Platinum 8360Y
- **Max MHz:** 3500
- **Nominal:** 2400
- **Enabled:** 72 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 chips
- **Cache L1:** 32 KB I + 48 KB D on chip per core
- **L2:** 1.25 MB I+D on chip per core
- **L3:** 54 MB I+D on chip per chip
- **Memory:** 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)
- **Storage:** 125 GB on tmpfs
- **Other:** None
# SPEC CPU®2017 Floating Point Rate Result

**Dell Inc.**

PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

<table>
<thead>
<tr>
<th>CPU2017 License: 55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
</tr>
<tr>
<td>Test Date: Apr-2021</td>
</tr>
<tr>
<td>Hardware Availability: Apr-2021</td>
</tr>
<tr>
<td>Software Availability: Feb-2021</td>
</tr>
</tbody>
</table>

## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>144</td>
<td>1989</td>
<td>726</td>
<td>1987</td>
<td>727</td>
<td>72</td>
<td>734</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>144</td>
<td>301</td>
<td>607</td>
<td>301</td>
<td>605</td>
<td>144</td>
<td>301</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>144</td>
<td>362</td>
<td>378</td>
<td>363</td>
<td>377</td>
<td>144</td>
<td>362</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>144</td>
<td>1796</td>
<td>210</td>
<td>1797</td>
<td>210</td>
<td>72</td>
<td>663</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>144</td>
<td>606</td>
<td>555</td>
<td>608</td>
<td>553</td>
<td>144</td>
<td>530</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>144</td>
<td>563</td>
<td>270</td>
<td>563</td>
<td>270</td>
<td>144</td>
<td>563</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>144</td>
<td>936</td>
<td>344</td>
<td>935</td>
<td>345</td>
<td>72</td>
<td>439</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>144</td>
<td>434</td>
<td>506</td>
<td>433</td>
<td>507</td>
<td>144</td>
<td>434</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>144</td>
<td>516</td>
<td>488</td>
<td>515</td>
<td>489</td>
<td>144</td>
<td>516</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>144</td>
<td>277</td>
<td>1290</td>
<td>277</td>
<td>1290</td>
<td>144</td>
<td>277</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>144</td>
<td>283</td>
<td>855</td>
<td>287</td>
<td>845</td>
<td>144</td>
<td>280</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>144</td>
<td>2459</td>
<td>228</td>
<td>2464</td>
<td>228</td>
<td>144</td>
<td>2459</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>144</td>
<td>1446</td>
<td>158</td>
<td>1444</td>
<td>158</td>
<td>72</td>
<td>574</td>
</tr>
</tbody>
</table>

**SPECrate®2017_fp_base = 430**

**SPECrate®2017_fp_peak = 456**

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 =
"/mnt/ramdisk/cpu2017-1.1.7-ic2021.1/lib/intel64:/mnt/ramdisk/cpu2017-1.1.7-ic2021.1/je5.0.1-64"

MALLOC_CONF = "retain:true"

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Red Hat Enterprise Linux 8.1

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

Dell Inc.
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

SPECrate®2017_fp_base = 430
SPECrate®2017_fp_peak = 456

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

General Notes (Continued)

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.

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>
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

Benchmark run from a 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G tmpfs /mnt/ramdisk"

Platform Notes

BIOS Settings:
  Sub NUMA Cluster : 2-Way Clustering
  Virtualization Technology : Disabled
  System Profile : Custom
  CPU Power Management : Maximum Performance
  C1E : Disabled
  C States : Autonomous
  Memory Patrol Scrub : Disabled
  Energy Efficiency Policy : Performance
  CPU Interconnect Bus Link
  Power Management : Disabled

Sysinfo program  /mnt/ramdisk/cpu2017-1.1.7-ic2021.1/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost.localdomain Fri Apr  2 15:31:58 2021

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) Platinum 8360Y CPU @ 2.40GHz

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

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

SPECrate®2017_fp_base = 430
SPECrate®2017_fp_peak = 456

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Apr-2021
Hardware Availability: Apr-2021
Software Availability: Feb-2021

Platform Notes (Continued)

2 "physical id"s (chips)
144 "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 : 36
siblings : 72
physical 0: cores 0 1 2 3 4 5 6 7 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35
physical 1: cores 0 1 2 3 4 5 6 7 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 144
On-line CPU(s) list: 0-143
Thread(s) per core: 2
Core(s) per socket: 36
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8360Y CPU @ 2.40GHz
Stepping: 6
CPU MHz: 2103.292
BogoMIPS: 4800.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 55296K
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76,80,84,88,92,96,100,104,108,112,116,120,124,128,132,136,140
NUMA node1 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78,82,86,90,94,98,102,106,110,114,118,122,126,130,134,138,142
NUMA node2 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85,89,93,97,101,105,109,113,117,121,125,129,133,137,141
Flags: fpu vme de pse tsc msr aes cmov cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp

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

**Dell Inc.**

PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base = 430</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak = 456</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 55  
**Test Date:** Apr-2021  
**Test Sponsor:** Dell Inc.  
**Hardware Availability:** Apr-2021  
**Tested by:** Dell Inc.  
**Software Availability:** Feb-2021

---

**Platform Notes (Continued)**

```
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 xtrspr 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_13 invpcid_single ssbd mba ibpb stibp ibrs Enhanced tpr_shadow vnmiflexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cmq rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt xsavec xsaveopt xgetbv1 xsave esm tsc_deadline_timer aes xsave avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_vitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_lid arch_capabilities
```

```
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 48 52 56 60 64 68 72 76 80 84 88 92 96 100 104 108 112 116 120 124 128 132 136 140
node 0 size: 257434 MB
node 0 free: 239309 MB
node 1 cpus: 2 6 10 14 18 22 26 30 34 38 42 46 50 54 58 62 66 70 74 78 82 86 90 94 98 102 106 110 114 118 122 126 130 134 138 142
node 1 size: 258039 MB
node 1 free: 244457 MB
node 2 cpus: 1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89 93 97 101 105 109 113 117 121 125 129 133 137 141
node 2 size: 258039 MB
node 2 free: 235078 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 91 95 99 103 107 111 115 119 123 127 131 135 139 143
node 3 size: 258008 MB
node 3 free: 244414 MB
node distances:
node 0 1 2 3
0: 10 11 20 20
1: 11 10 20 20
2: 20 20 10 11
3: 20 20 11 10
```

```
From /proc/meminfo
MemTotal: 1056279020 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/sbin/tuned-adm active

(Continued on next page)
## Platform Notes (Continued)

Current active profile: throughput-performance

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:

- CVE-2018-12207 (iTLB Multihit): Not affected
- CVE-2018-3620 (L1 Terminal Fault): Not affected
- Microarchitectural Data Sampling: Not affected
- CVE-2017-5754 (Meltdown): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swapgs barriers and __user pointer sanitization
- CVE-2017-5753 (Spectre variant 1): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
- CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
- CVE-2020-0543 (Special Register Buffer Data Sampling): No status reported
- CVE-2019-11135 (TSX Asynchronous Abort): Not affected

```
run-level 3 Apr 2 10:09
```

```
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.7-ic2021.1
```

```
Filesystem     Type   Size  Used Avail Use% Mounted on
  tmpfs          tmpfs  125G   61G   65G  49% /mnt/ramdisk
```

From `/sys/devices/virtual/dmi/id`

```
Vendor: Dell Inc.
Product: PowerEdge C6520
Product Family: PowerEdge
```

(Continued on next page)
Platform Notes (Continued)

Serial: SDPT078

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:
16x 00AD063200AD HMAA8GR7AJR4N-XN 64 GB 2 rank 3200

BIOS:
BIOS Vendor: Dell Inc.
BIOS Version: 1.1.0
BIOS Date: 03/25/2021
BIOS Revision: 1.1

(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) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, |
| Version 2021.1 Build 20201113                                           |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.            |
-----------------------------------------------------------------------------

==============================================================================
| C++             | 508.namd_r(base, peak) 510.parest_r(base, peak)                           |
-----------------------------------------------------------------------------
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,|
| Version 2021.1 Build 20201113                                           |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.            |
-----------------------------------------------------------------------------

==============================================================================
| C++, C          | 511.povray_r(peak)                                                     |
-----------------------------------------------------------------------------
| Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on     |
| Intel(R) 64, Version 2021.1 Build 20201112_000000                         |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.            |
| Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)|
| 64, Version 2021.1 Build 20201112_000000                                   |
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.            |
-----------------------------------------------------------------------------

(Continued on next page)
Compiler Version Notes (Continued)

==============================================================================
C++, C          | 511.povray_r(base) 526.blender_r(base, peak)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C++, C          | 511.povray_r(peak)
==============================================================================
Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C++, C          | 511.povray_r(base) 526.blender_r(base, peak)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
==============================================================================
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

SPECrater®2017_fp_base = 430
SPECrater®2017_fp_peak = 456

CPU2017 License: 55
Test Sponsor: Dell Inc.
Test Date: Apr-2021
Hardware Availability: Apr-2021
Tested by: Dell Inc.
Software Availability: Feb-2021

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 Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Fortran, C     | 521.wrf_r(peak)
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
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 Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Fortran, C     | 521.wrf_r(peak)
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
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 Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

(Continued on next page)
spec

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

SPECrate®2017_fp_base = 430
SPECrate®2017_fp_peak = 456

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

Test Date: Apr-2021
Hardware Availability: Apr-2021
Software Availability: Feb-2021

Compiler Version Notes (Continued)

Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icx

Benchmarks using both C and C++:
icpx icx

Benchmarks using Fortran, C, and C++:
icpx icx 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
Dell Inc.  
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)  

SPEC CPU®2017 Floating Point Rate Result  

Copyright 2017-2021 Standard Performance Evaluation Corporation  

Dell Inc.  
GHz)  

SPECrate®2017_fp_base = 430  
SPECrate®2017_fp_peak = 456  

CPU2017 License: 55  
Test Sponsor: Dell Inc.  
Test Date: Apr-2021  
Hardware Availability: Apr-2021  
 Tested by: Dell Inc.  
Softwate Availability: Feb-2021

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:
-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both Fortran and C:

Benchmarks using both C and C++:
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using Fortran, C, and C++:
## Dell Inc.

PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)

<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>
</tbody>
</table>

**SPECrate®2017_fp_base = 430**

**SPECrate®2017_fp_peak = 456**

**Test Date:** Apr-2021

**Hardware Availability:** Apr-2021

**Software Availability:** Feb-2021

### Peak Compiler Invocation

- **C benchmarks:**
  - icx

- **C++ benchmarks:**
  - icpx

- **Fortran benchmarks:**
  - ifort

- **Benchmarks using both Fortran and C:**
  - 521.wrf_r: ifort icc
  - 527.cam4_r: ifort icx

- **Benchmarks using both C and C++:**
  - 511.povray_r: icpc icc
  - 526.blender_r: icpx icx

- **Benchmarks using Fortran, C, and C++:**
  - icpx icx ifort

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

- **C benchmarks:**
  - 519.lbm_r: basepeak = yes
  - 538.imagick_r: basepeak = yes

- **Fortran benchmarks:**
  - 544.nab_r: -W -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
  - Ofast -gopt-mem-layout-trans=4
  - -fimf-accuracy-bits=14:sqrt
  - -mbranches-within-32B-boundaries -ljemalloc
  - -L/usr/local/jemalloc64-5.0.1/lib

(Continued on next page)
Peak Optimization Flags (Continued)

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -w -m64 -W1,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-1jemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: -w -m64 -W1,-z,muldefs -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
-1jemalloc -L/usr/local/jemalloc64-5.0.1/lib

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
-1/L/usr/local/jemalloc64-5.0.1/lib -1jemalloc

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
-1/L/usr/local/jemalloc64-5.0.1/lib -1jemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

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

Dell Inc.
PowerEdge C6520 (Intel Xeon Platinum 8360Y, 2.40 GHz)  

| SPECrate®2017_fp_base = 430 |
| SPECrate®2017_fp_peak = 456 |

| CPU2017 License: 55          | Test Date:         |
| Test Sponsor: Dell Inc.     | Hardware Availability: Apr-2021 |
| Tested by: Dell Inc.        | Software Availability: Feb-2021 |

Peak Optimization Flags (Continued)

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:

http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml

SPEC CPU and SPECrate 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 v1.1.7 on 2021-04-02 15:31:56-0400.
Originally published on 2021-05-18.