## SPEC®CPU®2017 Floating Point Rate Result

### Dell Inc.

**PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)**

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r 160</td>
<td>731</td>
<td>738</td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>507.cactusBSSN_r 160</td>
<td>647</td>
<td></td>
</tr>
<tr>
<td>508.namd_r 160</td>
<td>405</td>
<td></td>
</tr>
<tr>
<td>510.parest_r 160</td>
<td>213</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>295</td>
<td></td>
</tr>
<tr>
<td>511.povray_r 160</td>
<td>597</td>
<td>684</td>
</tr>
<tr>
<td>519.lbm_r 160</td>
<td>269</td>
<td></td>
</tr>
<tr>
<td>521.wrf_r 160</td>
<td>344</td>
<td>376</td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>526.blender_r 160</td>
<td>544</td>
<td></td>
</tr>
<tr>
<td>527.cam4_r 160</td>
<td>515</td>
<td></td>
</tr>
<tr>
<td>538.imagick_r 160</td>
<td>1380</td>
<td></td>
</tr>
<tr>
<td>544.nab_r 160</td>
<td>920</td>
<td>926</td>
</tr>
<tr>
<td>549.fotonik3d_r 160</td>
<td>229</td>
<td></td>
</tr>
<tr>
<td>554.roms_r 160</td>
<td>159</td>
<td>198</td>
</tr>
</tbody>
</table>

**Software**

- **OS:** Red Hat Enterprise Linux 8.3 (Ootpa) 4.18.0-240.el8.x86_64
- **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;
- **Firmware:** Version 1.1.2 released Apr-2021
- **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 8380
- **Max MHz:** 3400
- **Nominal:** 2300
- **Enabled:** 80 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:** 60 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 MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

---

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

---

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>160</td>
<td>2193</td>
<td>732</td>
<td><strong>2194</strong></td>
<td>731</td>
<td></td>
<td>80</td>
<td>1087</td>
<td>738</td>
<td>1087</td>
<td>738</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>160</td>
<td><strong>313</strong></td>
<td>647</td>
<td>313</td>
<td>647</td>
<td></td>
<td>160</td>
<td><strong>313</strong></td>
<td>647</td>
<td>313</td>
<td>647</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>508.namd_r</td>
<td>160</td>
<td>375</td>
<td>405</td>
<td>375</td>
<td>406</td>
<td></td>
<td>160</td>
<td>375</td>
<td>405</td>
<td>375</td>
<td>406</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>510.parest_r</td>
<td>160</td>
<td><strong>1969</strong></td>
<td>213</td>
<td>1968</td>
<td>213</td>
<td></td>
<td>80</td>
<td>708</td>
<td>296</td>
<td>709</td>
<td>295</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>511.povray_r</td>
<td>160</td>
<td>625</td>
<td>597</td>
<td><strong>625</strong></td>
<td>597</td>
<td></td>
<td>160</td>
<td>545</td>
<td>686</td>
<td>546</td>
<td>684</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>160</td>
<td>626</td>
<td>269</td>
<td>625</td>
<td>270</td>
<td></td>
<td>160</td>
<td><strong>626</strong></td>
<td>269</td>
<td>625</td>
<td>270</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>160</td>
<td>1036</td>
<td>346</td>
<td><strong>1041</strong></td>
<td>344</td>
<td></td>
<td>80</td>
<td>477</td>
<td>376</td>
<td>476</td>
<td>377</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>526.blender_r</td>
<td>160</td>
<td>447</td>
<td>545</td>
<td><strong>448</strong></td>
<td>544</td>
<td></td>
<td>160</td>
<td>447</td>
<td>545</td>
<td><strong>448</strong></td>
<td>544</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>160</td>
<td><strong>543</strong></td>
<td>515</td>
<td>542</td>
<td>516</td>
<td></td>
<td>160</td>
<td><strong>543</strong></td>
<td>515</td>
<td>542</td>
<td>516</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>160</td>
<td>288</td>
<td>1380</td>
<td><strong>289</strong></td>
<td>1380</td>
<td></td>
<td>160</td>
<td>288</td>
<td>1380</td>
<td><strong>289</strong></td>
<td>1380</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>544.nab_r</td>
<td>160</td>
<td><strong>293</strong></td>
<td><strong>920</strong></td>
<td>921</td>
<td></td>
<td></td>
<td>160</td>
<td><strong>291</strong></td>
<td>926</td>
<td>288</td>
<td>934</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>160</td>
<td>2720</td>
<td>229</td>
<td><strong>2720</strong></td>
<td>229</td>
<td></td>
<td>160</td>
<td>2720</td>
<td>229</td>
<td><strong>2720</strong></td>
<td>229</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>554.roms_r</td>
<td>160</td>
<td>1594</td>
<td>159</td>
<td><strong>1596</strong></td>
<td>159</td>
<td></td>
<td>80</td>
<td>640</td>
<td>198</td>
<td><strong>641</strong></td>
<td>198</td>
<td></td>
<td></td>
<td></td>
<td></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 = 
  "/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 MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPEC®2017.fp_base = 448
SPEC®2017.fp_peak = 476

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 Mon Apr 19 01:04:03 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 8380 CPU @ 2.30GHz

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

Dell Inc.

PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

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

SPECrate®2017_fp_base = 448
SPECrate®2017_fp_peak = 476

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

Platform Notes (Continued)

2 "physical id"s (chips)
160 "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 : 40
siblings : 80
physical 0: cores 0 1 2 3 4 5 6 7 8 9 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 36 37 38 39
physical 1: cores 0 1 2 3 4 5 6 7 8 9 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 36 37 38 39

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 160
On-line CPU(s) list: 0-159
Thread(s) per core: 2
Core(s) per socket: 40
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz
Stepping: 6
CPU MHz: 1615.519
BogoMIPS: 4600.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 61440K
NUMA node0 CPU(s): 0-19, 80-99
NUMA node1 CPU(s): 20-39, 110-119
NUMA node2 CPU(s): 40-59, 120-139
NUMA node3 CPU(s): 60-79, 140-159
Flags: fpu vme de pse tsc msr pae mce cmov pat pse36 clflush dtsc acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtsdp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtst64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm 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 invpcid_single intel_puin ssbd mba ibrs ibp sb ibrs_enabled fsgsbase tsc_adj wealthy hle avx2 smep bmi2 erms invpcid cmq rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaves xsaveopt xsavecp xgetbv1 xsave xsavecp xcm_llc xcm_occup_llc xcm_mbm_total xcm_mbm_local split_lock_detect wbnoinvd

(Continued on next page)
Platform Notes (Continued)

dtherm ida arat pln pts avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d arch_capabilities

Arch Capabilities

/proc/cpuinfo cache data

Cache size: 61440 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 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 80 81 82 83 84 85 86 87
88 89 90 91 92 93 94 95 96 97 98 99

Node 0 size: 250048 MB

Node 0 free: 237840 MB

Node 1 cpus: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 100 101 102
103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119

Node 1 size: 251358 MB

Node 1 free: 242812 MB

Node 2 cpus: 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 120 121 122
123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139

Node 2 size: 251694 MB

Node 2 free: 242649 MB

Node 3 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 140 141 142
143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159

Node 3 size: 250630 MB

Node 3 free: 233701 MB

Node distances:

Node 0: 10 11 20 20
Node 1: 11 10 20 20
Node 2: 20 20 10 11
Node 3: 20 20 11 10

From /proc/meminfo

MemTotal: 1056265392 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sbin/tuned-adm active

Current active profile: throughput-performance

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

os-release:

NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"

(Continued on next page)
Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate®2017_fp_base = 448
SPECrate®2017_fp_peak = 476

Platform Notes (Continued)

VERSION_ID="8.3"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
    Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 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): Not affected
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Apr 18 19:25

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

Filesystem     Type   Size  Used Avail Use% Mounted on
tmpfs          tmpfs  125G   66G   60G  53% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
Vendor:         Dell Inc.
Product:        PowerEdge MX750c
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:
    16x 00AD063200AD HMAA8GR7AJR4N-XN 64 GB 2 rank 3200

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

Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate® 2017_fp_base = 448
SPECrate® 2017_fp_peak = 476

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)

16x Not Specified Not Specified

BIOS:
BIOS Vendor: Dell Inc.
BIOS Version: 1.1.2
BIOS Date: 04/09/2021
BIOS Revision: 1.1

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>519.lbmr(base, peak) 538.imagick_r(base, peak) 544.nabr(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,</td>
<td></td>
</tr>
<tr>
<td>Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>
==============================================================================

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

==============================================================================
<table>
<thead>
<tr>
<th>C++, C</th>
<th>511.povray_r(peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on</td>
<td></td>
</tr>
<tr>
<td>Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
<tr>
<td>Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)</td>
<td></td>
</tr>
<tr>
<td>64, Version 2021.1 Build 20201112_000000</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>
==============================================================================

==============================================================================
<table>
<thead>
<tr>
<th>C++, C</th>
<th>511.povray_r(base) 526.blender_r(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,</td>
<td></td>
</tr>
<tr>
<td>Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>
(Continued on next page)
**Compiler Version Notes (Continued)**

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.

<table>
<thead>
<tr>
<th></th>
<th>Spec CPU®2017 Floating Point Rate Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
<td>SPECrate®2017_fp_base = 448</td>
</tr>
<tr>
<td>PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)</td>
<td>SPECrate®2017_fp_peak = 476</td>
</tr>
<tr>
<td>CPU2017 License: 55</td>
<td>Test Date: Apr-2021</td>
</tr>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Apr-2021</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Feb-2021</td>
</tr>
</tbody>
</table>

---

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

---

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.

---

(Continued on next page)
Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

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

Compiler Version Notes (Continued)

---

Fortran, C | 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(base)

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 | 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 | 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 | 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(base)

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.
**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

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

Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate®2017_fp_base = 448
SPECrate®2017_fp_peak = 476

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:
- `w -m64 -Wl,-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 -ljemalloc`  
- `-L/usr/local/jemalloc64-5.0.1/lib`

Benchmarks using both Fortran and C:
- `w -m64 -std=c11 -Wl,-z,muldefs -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`  
- `-mbranches-within-32B-boundaries -nostandard-realloc-lhs`  
- `-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`

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++:
- `w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math`  
- `-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`  
- `-O3`  
- `-no-prec-div -qopt-prefetch -ffinite-math-only`  
- `-qopt-multiple-gather-scatter-by-shuffles`  
- `-mbranches-within-32B-boundaries -nostandard-realloc-lhs`  
- `-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`

Peak Compiler Invocation

C benchmarks:
- `icx`

C++ benchmarks:
- `icpx`
Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate®2017_fp_base = 448
SPECrate®2017_fp_peak = 476

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

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

Peak Compiler Invocation (Continued)

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
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

C++ benchmarks:
508.namd_r: basepeak = yes
510.parest_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops

(Continued on next page)
Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate®2017_fp_base = 448
SPECrate®2017_fp_peak = 476

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

Peak Optimization Flags (Continued)

510.parest_r (continued):
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: -w -m64 -Wl,-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
-ljemalloc -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
-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
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge MX750c (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate®2017_fp_base = 448
SPECrate®2017_fp_peak = 476

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

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

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 2021-04-19 01:04:02-0400.
Originally published on 2021-05-18.