## Dell Inc.
PowerEdge MX750c (Intel Xeon Silver 4309Y, 2.80 GHz)

### SPEC CPU®2017 Floating Point Rate Result

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>143</td>
<td>147</td>
</tr>
</tbody>
</table>

**Dell Inc.**

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Jul-2021  
**Hardware Availability:** Apr-2021  
**Software Availability:** Dec-2020

### Hardware

<table>
<thead>
<tr>
<th>COPY</th>
<th>SPECrate®2017_fp_base (143)</th>
<th>SPECrate®2017_fp_peak (147)</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
<td>173</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
<td>96.0</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>32</td>
<td>80.1</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
<td>86.3</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
<td>143</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>32</td>
<td>112</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
<td>136</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
<td>126</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
<td>124</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>32</td>
<td>337</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
<td>219</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
<td>219</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
<td>65.8</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>129</td>
</tr>
</tbody>
</table>

**CPU Name:** Intel Xeon Silver 4309Y  
**Max MHz:** 3600  
**Nominal:** 2800  
**Enabled:** 16 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:** 12 MB I+D on chip per chip  
**Other:** None  
**Memory:** 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R, running at 2666)  
**Storage:** 125 GB on tmpfs  
**Other:** None

### Software

<table>
<thead>
<tr>
<th>OS:</th>
<th>Red Hat Enterprise Linux 8.3 (Ootpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>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;</td>
</tr>
<tr>
<td>File System:</td>
<td>tmpfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Other:</td>
<td>jemalloc memory allocator V5.0.1</td>
</tr>
<tr>
<td>Power Management:</td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage.</td>
</tr>
</tbody>
</table>
# SPEC CPU®2017 Floating Point Rate Result

## Dell Inc.

PowerEdge MX750c (Intel Xeon Silver 4309Y, 2.80 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>Seconds</th>
<th>Ratio</th>
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<td>508.namd_r</td>
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<td>299</td>
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<td>521.wrf_r</td>
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<td>528</td>
<td>136</td>
<td>32</td>
<td>523</td>
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<td>65.9</td>
<td>773</td>
<td>65.8</td>
<td>16</td>
<td>340</td>
</tr>
</tbody>
</table>

**SPECrate®2017_fp_base = 143**  
**SPECrate®2017_fp_peak = 147**

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:

```bash  
LD_LIBRARY_PATH = 
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
    
   ...
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 Jun 11 06:44:39 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) Silver 4309Y CPU @ 2.80GHz
  2 "physical id"s (chips)
**Platform Notes (Continued)**

32 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```plaintext
cpu cores : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
```

From lscpu:
```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
Thread(s) per core: 2
Core(s) per socket: 8
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Silver 4309Y CPU @ 2.80GHz
Stepping: 6
CPU MHz: 933.638
BogoMIPS: 5600.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 12288K
NUMA node0 CPU(s): 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
NUMA node1 CPU(s): 1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pmse36 cd 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 monitoring ds_cpl vmx smx est tm2 ssse3 fma cx16
xtrunc 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 invpcid_single
intel_pinn ssbd mba ibrs ibpb stibp ibrs_enhanced fsgshare tsc_adjust bmi1 hle avx2
smep bmi2 ibrms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512sfma
clfshopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsavesopt xsaveopt xgetbv1
xsave cs_qmm llc cqm _occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect wbnoinvd
dtherm ida arat pni pts avx512vmbi umip pku ospke avx512_vmbi2 gfn i vaes vpcmllqdq
avx512_vnni avx512_bitalg tme avx512_vpopcntdq lal7 rdpid md_clear pconf g flush l1d
arch_capabilities
```

/proc/cpuinfo cache data

(Continued on next page)
Dell Inc.
PowerEdge MX750c (Intel Xeon Silver 4309Y, 2.80 GHz)

SPEC CPU®2017 Floating Point Rate Result

SPECrate®2017_fp_base = 143
SPECrate®2017_fp_peak = 147

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

Test Date: Jun-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

Platform Notes (Continued)

```
cache size : 12288 KB

From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a physical chip.
   available: 2 nodes (0-1)
    node 0 cpus: 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
    node 0 size: 503406 MB
    node 0 free: 494589 MB
    node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
    node 1 size: 503711 MB
    node 1 free: 508983 MB
    node distances:
       node   0   1
         0:  10  20
         1:  20  10

From /proc/meminfo
   MemTotal:       1056295108 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"
      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
```

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

- **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/swapsgs barriers and __user pointer sanitization
- **CVE-2017-5715 (Spectre variant 2):** Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
- **CVE-2020-0543 (Special Register Buffer Data Sampling):** Not affected
- **CVE-2019-11135 (TSX Asynchronous Abort):** Not affected

**run-level 3 Jun 11 02:03**

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

**Filesystem** | **Type** | **Size** | **Used** | **Avail** | **Use%** | **Mounted on**
---|---|---|---|---|---|---
tmpfs | tmpfs | 125G | 22G | 104G | 17% | /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 HMAA8GR7A4R4N-XN 64 GB 2 rank 3200, configured at 2666
- 16x Not Specified Not Specified

**BIOS:**
- **BIOS Vendor:** Dell Inc.
- **BIOS Version:** 1.1.3
- **BIOS Date:** 04/27/2021
- **BIOS Revision:** 1.1

(End of data from sysinfo program)

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## Compiler Version Notes

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<table>
<thead>
<tr>
<th>C</th>
<th>519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)</th>
</tr>
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</table>

(Continued on next page)
Dell Inc.

PowerEdge MX750c (Intel Xeon Silver 4309Y, 2.80 GHz)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

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SPECrate®2017_fp_base = 143
SPECrate®2017_fp_peak = 147

Compiler Version Notes (Continued)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
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------------------------------------------------------------------------------
==============================================================================
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.

------------------------------------------------------------------------------
==============================================================================
C++, C | 511.povray_r(base) 526.blender_r(base, peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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(Continued on next page)
Dell Inc.  
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**SPECrater®2017_fp_base = 143**  
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<th>CPU2017 License:</th>
<th>55</th>
</tr>
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<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Dell Inc.</td>
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<tr>
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<td>Test Date:</td>
<td>Jun-2021</td>
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<tr>
<td>Software Availability:</td>
<td>Dec-2020</td>
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**Compiler Version Notes (Continued)**

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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
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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.

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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.1 Build 20201112_000000  
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Dell Inc.
PowerEdge MX750c (Intel Xeon Silver 4309Y, 2.80 GHz)

SPEC CPU®2017 Floating Point Rate Result

SPECrate®2017_fp_base = 143
SPECrate®2017_fp_peak = 147

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

Test Date: Jun-2021
Hardware Availability: Apr-2021
Software Availability: Dec-2020

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

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

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SPEC CPU®2017 Floating Point Rate Result

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Base Optimization Flags (Continued)

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

(Continued on next page)
Peak Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
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 -qopt-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
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
### Dell Inc.

PowerEdge MX750c (Intel Xeon Silver 4309Y, 2.80 GHz)

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**Test Date:** Jun-2021  
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**Software Availability:** Dec-2020

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**Peak Optimization Flags (Continued)**

**Fortran benchmarks:**

- `503.bwaves_r`: `basepeak = yes`
- `549.fotonik3d_r`: `basepeak = yes`

**Benchmarks using both Fortran and C:**

- `521.wrf_r`: `basepeak = yes`
- `527.cam4_r`: `basepeak = yes`

**Benchmarks using both C and C++:**

- `526.blender_r`: `basepeak = yes`

**Benchmarks using Fortran, C, and C++:**

- `507.cactuBSSN_r`: `basepeak = yes`

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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:

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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 2021-06-11 06:44:38-0400.
Report generated on 2021-07-08 13:35:43 by CPU2017 PDF formatter v6442.
Originally published on 2021-07-06.