## Dell Inc.

PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

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<tr>
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<th>SPECrate\textsuperscript{©}2017_fp_peak</th>
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<td>354</td>
<td>375</td>
</tr>
<tr>
<td>64</td>
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<td>375</td>
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</table>

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Nov-2021  
**Hardware Availability:** Jul-2021  

**Hardware**

- **CPU Name:** Intel Xeon Gold 6338N  
- **Max MHz:** 3500  
- **Nominal:** 2200  
- **Enabled:** 64 cores, 2 chips, 2 threads/core  
- **Orderable:** 1.2 chips  
- **Cache L1:** 32 KB I + 48 KB D on chip per core  
- **Cache L2:** 1.25 MB I+D on chip per core  
- **Cache L3:** 48 MB I+D on chip per core  
- **Other:** None  
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R, running at 2666)  
- **Storage:** 125 GB on tmpfs  
- **Other:** None  

**Software**

- **OS:** Red Hat Enterprise Linux 8.3 (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  
- **Parallel:** No  
- **File System:** tmpfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 64-bit  
- **Other:** jemalloc memory allocator V5.0.1  
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage.
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

SPECrate®2017_fp_base = 354
SPECrate®2017_fp_peak = 375

Results Table

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<td>1513</td>
<td>134</td>
<td>64</td>
<td>602</td>
<td>169</td>
<td>604</td>
</tr>
</tbody>
</table>

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/cpu2017-1.1.8-ic2021.1/lib/intel64:/mnt/ramdisk/cpu2017-1.1.8-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
Transparent Huge Pages enabled by default

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

Dell Inc.

PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

SPECrate®2017_fp_base = 354
SPECrate®2017_fp_peak = 375

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

Test Date: Nov-2021
Hardware Availability: Jul-2021
Software Availability: Dec-2020

General Notes (Continued)

Prior to runcpu invocation
Filesystem page cache synced and cleared with:
`sync; echo 3 > /proc/sys/vm/drop_caches`
runcpu command invoked through numacl 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

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.

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
- PCI ASPM L1 Link Power Management: Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.8-ic2021.1/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost.localdomain Wed Nov 17 13:31:58 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) Gold 6338N CPU @ 2.20GHz

(Continued on next page)
Dell Inc.

PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

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

SPECrater®2017_fp_base = 354
SPECrater®2017_fp_peak = 375

Test Date: Nov-2021
Hardware Availability: Jul-2021
Software Availability: Dec-2020

Platform Notes (Continued)

2 "physical id"s (chips)
128 "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 : 32
siblings : 64
physical 0: cores 0 1 2 3 4 5 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31
physical 1: cores 0 1 2 3 4 5 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31

From lscpu from util-linux 2.32.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 128
On-line CPU(s) list: 0-127
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Gold 6338N CPU @ 2.20GHz
Stepping: 6
CPU MHz: 2491.784
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 49152K
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
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
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
NUMA node3 CPU(s):
115,119,123,127
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp

(Continued on next page)
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Platform Notes (Continued)

lm constant_tsc art arch_perfmon pebs bts rep_good noopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xptr 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_ppnin ssbd mba ibrs ibpb stibp ibrs_enhanced fs.gsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local split_lock_detect wnoinvd 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

/cache data

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
node 0 size: 125356 MB
node 0 free: 111711 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
node 1 size: 126110 MB
node 1 free: 110722 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
node 2 size: 126291 MB
node 2 free: 116475 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
node 3 size: 125988 MB
node 3 free: 116795 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: 527792664 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sbin/tuned-adm active

(Continued on next page)
## Dell Inc.

### SPEC CPU®2017 Floating Point Rate Result

PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

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<td>Software Availability: Dec-2020</td>
</tr>
</tbody>
</table>

### Platform Notes (Continued)

Current active profile: throughput-performance

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

```bash
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

```bash
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): Not affected
- CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- CVE-2017-5753 (Spectre variant 1): Mitigation: userscopy/swapgs barriers and __user pointer sanitation
- 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 Nov 17 07:39

```
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-ic2021.1
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 125G 55G 71G 44% /mnt/ramdisk
```

From /sys/devices/virtual/dmi/id

```
Vendor: Dell Inc.
Product: PowerEdge MX750c
Product Family: PowerEdge
```

(Continued on next page)
Dell Inc.  
PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

**SPEC CPU®2017 Floating Point Rate Result**

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**Test Sponsor:** Dell Inc.  
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**Software Availability:** Dec-2020

---

**Platform Notes (Continued)**

Serial: 1234567

Additional information from dmidecode 3.2 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 002C0632002C 18ASF4G72PDZ-3G2E1 32 GB 2 rank 3200, configured at 2666
- 16x Not Specified Not Specified

BIOS:
- BIOS Vendor: Dell Inc.
- BIOS Version: 1.3.8
- BIOS Date: 08/31/2021
- BIOS Revision: 1.3

(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)
**Dell Inc.**

**Dell Inc.**

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**SPECrate®2017_fp_base = 354**

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**Test Date:** Nov-2021

**Hardware Availability:** Jul-2021

**Software Availability:** Dec-2020

**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.
```

(Continued on next page)
<table>
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```plaintext
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)  
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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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Fortran, C  | 521.wrf_r(base) 527.cam4_r(base, peak)  
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### Compiler Version Notes (Continued)

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.

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 MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

**SPECrate®2017_fp_base = 354**  
**SPECrate®2017_fp_peak = 375**

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<td>Software Availability: Dec-2020</td>
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### 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:**
- `-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 -noliststandard-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 -noliststandard-realloc-lhs`
- `-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib`
## Dell Inc.

### Device Details

- **Device Model:** PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)

### SPEC CPU 2017 Floating Point Rate Results

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### SPECrate 2017 Floating Point Results

- **SPECrate®2017_fp_base = 354**
- **SPECrate®2017_fp_peak = 375**

### 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:**

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

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

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++:  

(Continued on next page)
Dell Inc.  

PowerEdge MX750c (Intel Xeon Gold 6338N, 2.20 GHz)  

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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
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-ICX-rev1.4.xml