SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

$SPECrate^{®}2017\_fp\_base = 851$

$SPECrate^{®}2017\_fp\_peak = 912$

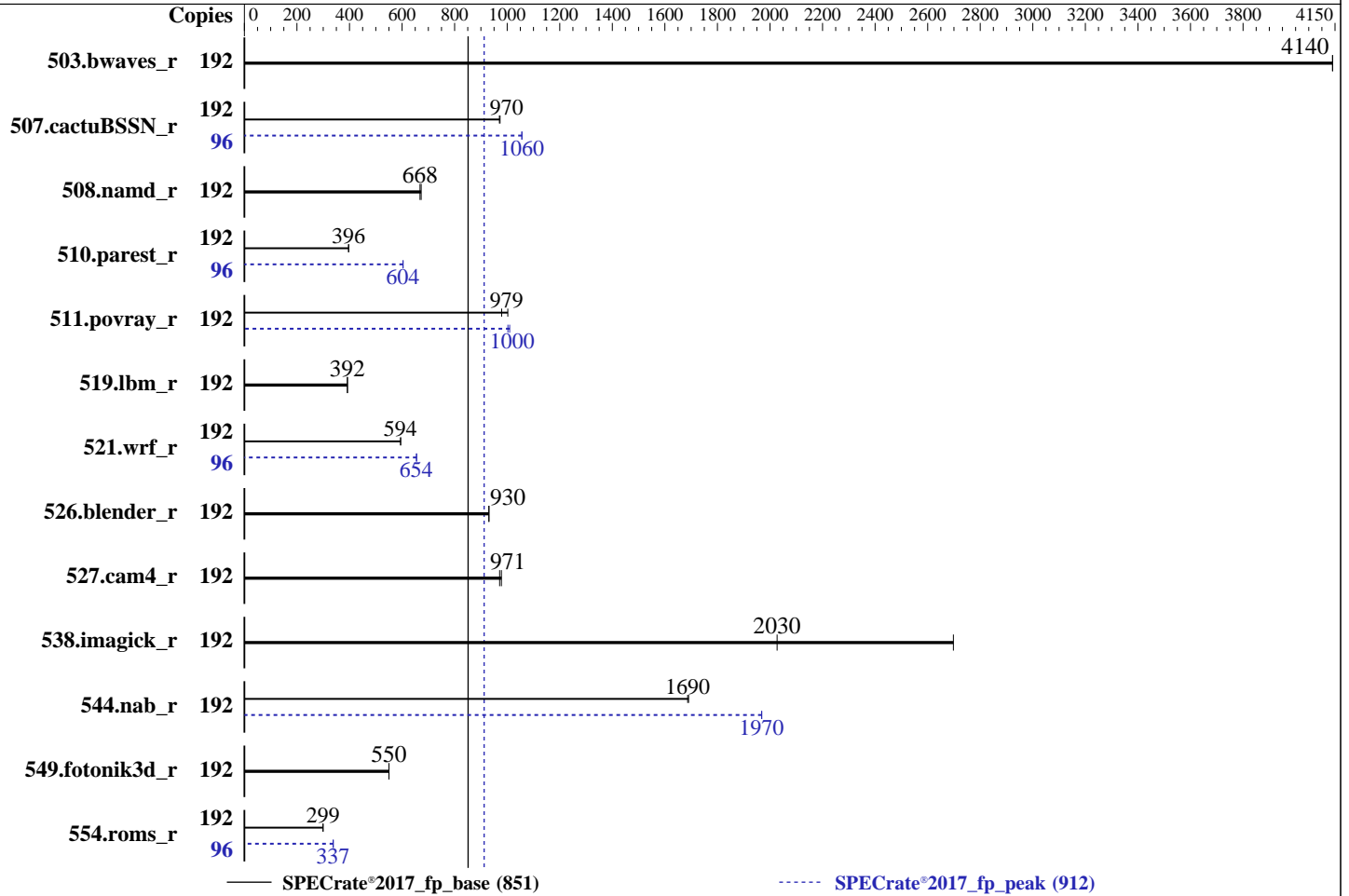**CPU2017 License:** 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Copies

Benchmark	base	peak
503.bwaves_r	192 / 4140	
507.cactuBSSN_r	192 / 970	96 / 1060
508.namd_r	192 / 668	
510.parest_r	192 / 396	96 / 604
511.povray_r	192 / 979	/ 1000
519.lbm_r	192 / 392	
521.wrf_r	192 / 594	96 / 654
526.blender_r	192 / 930	
527.cam4_r	192 / 971	
538.imagick_r	192 / 2030	
544.nab_r	192 / 1690	/ 1970
549.fotonik3d_r	192 / 550	
554.roms_r	192 / 299	96 / 337

—— SPECrate®2017_fp_base (851)   - - - - SPECrate®2017_fp_peak (912)

Hardware

CPU Name: Intel Xeon Platinum 8468
 Max MHz: 3800
 Nominal: 2100
Enabled: 96 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 105 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 125 GB on tmpfs
Other: None

Software

OS: Red Hat Enterprise Linux 8.7 (Ootpa)
 4.18.0-425.3.1.el8.x86_64
Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2022.1 of Intel Fortran Compiler
 for Linux;
Parallel: No
Firmware: Version 0.3.2 released Nov-2022
File System: tmpfs
System State: Run level 5 (graphical 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

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573	**Test Date:** Dec-2022
Test Sponsor: Dell Inc.	**Hardware Availability:** Feb-2023
Tested by: Dell Inc.	**Software Availability:** Nov-2022

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	192	465	4140	**465**	**4140**			192	465	4140	**465**	**4140**		
507.cactuBSSN_r	192	250	973	**250**	**970**			96	115	1060	**115**	**1060**		
508.namd_r	192	**273**	**668**	271	673			192	**273**	**668**	271	673		
510.parest_r	192	**1268**	**396**	1265	397			96	416	604	**416**	**604**		
511.povray_r	192	**458**	**979**	447	1000			192	**447**	**1000**	444	1010		
519.lbm_r	192	**517**	**392**	516	392			192	**517**	**392**	516	392		
521.wrf_r	192	723	595	**724**	**594**			96	**329**	**654**	328	655		
526.blender_r	192	314	931	**314**	**930**			192	314	931	**314**	**930**		
527.cam4_r	192	**346**	**971**	343	978			192	**346**	**971**	343	978		
538.imagick_r	192	177	2700	**236**	**2030**			192	177	2700	**236**	**2030**		
544.nab_r	192	191	1690	**192**	**1690**			192	**164**	**1970**	164	1970		
549.fotonik3d_r	192	1360	550	**1361**	**550**			192	1360	550	**1361**	**550**		
554.roms_r	192	**1019**	**299**	1019	299			96	**452**	**337**	451	339		
SPECrate®2017_fp_base =		**851**												
SPECrate®2017_fp_peak =		**912**												

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-ic2022.1/lib/intel64:/mnt/ramdisk/cpu2017-1.
    1.8-ic2022.1/je5.0.1-64"
MALLOC_CONF = "retain:true"

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default

(Continued on next page)

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

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 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
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases


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:
                 ADDDC Setting : Disabled
        DIMM Self Healing on
   Uncorrectable Memory Error : Disabled
   Virtualization Technology : Disabled
            Sub NUMA Cluster : 4-way Clustering
    DCU Streamer Prefetcher : Disabled
               LLC Prefetch : Disabled
        Dead Line LLC Alloc : Disabled
             Optimizer Mode : Enabled

             System Profile : Custom
      CPU Power Management : Maximum Performance
                        C1E : Disabled
                   C States : Autonomous
         Memory Patrol Scrub : Disabled
      Energy Efficiency Policy : Performance
           PCI ASPM L1 Link
          Power Management : Disabled

 Sysinfo program /mnt/ramdisk/cpu2017-1.1.8-ic2022.1/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on localhost.localdomain Wed Dec  7 07:29:49 2022


 SUT (System Under Test) info as seen by some common utilities.
```

(Continued on next page)

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
  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 8468
        2  "physical id"s (chips)
        192 "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 : 48
        siblings  : 96
        physical 0: cores 0 1 2 3 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 40 41 42 43 44 45 46 47
        physical 1: cores 0 1 2 3 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 40 41 42 43 44 45 46 47

  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):              192
        On-line CPU(s) list: 0-191
        Thread(s) per core:  2
        Core(s) per socket:  48
        Socket(s):           2
        NUMA node(s):        8
        Vendor ID:           GenuineIntel
        BIOS Vendor ID:      Intel
        CPU family:          6
        Model:               143
        Model name:          Intel(R) Xeon(R) Platinum 8468
        BIOS Model name:     Intel(R) Xeon(R) Platinum 8468
        Stepping:            8
        CPU MHz:             2100.000
        BogoMIPS:            4200.00
        L1d cache:           48K
        L1i cache:           32K
        L2 cache:            2048K
        L3 cache:            107520K
        NUMA node0 CPU(s):
        0,4,8,12,16,20,24,28,32,36,40,44,96,100,104,108,112,116,120,124,128,132,136,140
        NUMA node1 CPU(s):
        48,52,56,60,64,68,72,76,80,84,88,92,144,148,152,156,160,164,168,172,176,180,184,188
        NUMA node2 CPU(s):
        2,6,10,14,18,22,26,30,34,38,42,46,98,102,106,110,114,118,122,126,130,134,138,142
        NUMA node3 CPU(s):
        50,54,58,62,66,70,74,78,82,86,90,94,146,150,154,158,162,166,170,174,178,182,186,190
```

(Continued on next page)

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
     NUMA node4 CPU(s):
     1,5,9,13,17,21,25,29,33,37,41,45,97,101,105,109,113,117,121,125,129,133,137,141
     NUMA node5 CPU(s):
     49,53,57,61,65,69,73,77,81,85,89,93,145,149,153,157,161,165,169,173,177,181,185,189
     NUMA node6 CPU(s):
     3,7,11,15,19,23,27,31,35,39,43,47,99,103,107,111,115,119,123,127,131,135,139,143
     NUMA node7 CPU(s):
     51,55,59,63,67,71,75,79,83,87,91,95,147,151,155,159,163,167,171,175,179,183,187,191
     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
     lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
     aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl smx est tm2 ssse3 sdbg
     fma cx16 xtpr 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 cat_l2 cdp_l3
     invpcid_single cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust
     bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
     avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt
     xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
     split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts avx512vbmi
     umip pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
     tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd
     fsrm md_clear serialize tsxldtrk pconfig arch_lbr amx_bf16 avx512_fp16 amx_tile
     amx_int8 flush_l1d arch_capabilities

 /proc/cpuinfo cache data
    cache size : 107520 KB

 From numactl --hardware
 WARNING: a numactl 'node' might or might not correspond to a physical chip.
   available: 8 nodes (0-7)
   node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44 96 100 104 108 112 116 120 124 128 132
   136 140
   node 0 size: 128173 MB
   node 0 free: 114422 MB
   node 1 cpus: 48 52 56 60 64 68 72 76 80 84 88 92 144 148 152 156 160 164 168 172 176
   180 184 188
   node 1 size: 129018 MB
   node 1 free: 119972 MB
   node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46 98 102 106 110 114 118 122 126 130 134
   138 142
   node 2 size: 129018 MB
   node 2 free: 119821 MB
   node 3 cpus: 50 54 58 62 66 70 74 78 82 86 90 94 146 150 154 158 162 166 170 174 178
   182 186 190
   node 3 size: 129018 MB
   node 3 free: 119966 MB
   node 4 cpus: 1 5 9 13 17 21 25 29 33 37 41 45 97 101 105 109 113 117 121 125 129 133
```

(Continued on next page)

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

$SPECrate^{®}2017\_fp\_base = 851$

$SPECrate^{®}2017\_fp\_peak = 912$

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
     137 141
     node 4 size: 129018 MB
     node 4 free: 119031 MB
     node 5 cpus: 49 53 57 61 65 69 73 77 81 85 89 93 145 149 153 157 161 165 169 173 177
     181 185 189
     node 5 size: 129018 MB
     node 5 free: 119937 MB
     node 6 cpus: 3 7 11 15 19 23 27 31 35 39 43 47 99 103 107 111 115 119 123 127 131 135
     139 143
     node 6 size: 129018 MB
     node 6 free: 112074 MB
     node 7 cpus: 51 55 59 63 67 71 75 79 83 87 91 95 147 151 155 159 163 167 171 175 179
     183 187 191
     node 7 size: 129006 MB
     node 7 free: 119895 MB
     node distances:
     node   0    1    2    3    4    5    6    7
       0:  10   12   12   12   21   21   21   21
       1:  12   10   12   12   21   21   21   21
       2:  12   12   10   12   21   21   21   21
       3:  12   12   12   10   21   21   21   21
       4:  21   21   21   21   10   12   12   12
       5:  21   21   21   21   12   10   12   12
       6:  21   21   21   21   12   12   10   12
       7:  21   21   21   21   12   12   12   10

  From /proc/meminfo
     MemTotal:       1056043120 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="8.7 (Ootpa)"
       ID="rhel"
       ID_LIKE="fedora"
       VERSION_ID="8.7"
       PLATFORM_ID="platform:el8"
       PRETTY_NAME="Red Hat Enterprise Linux 8.7 (Ootpa)"
       ANSI_COLOR="0;31"
     redhat-release: Red Hat Enterprise Linux release 8.7 (Ootpa)
     system-release: Red Hat Enterprise Linux release 8.7 (Ootpa)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:8::baseos
```

(Continued on next page)

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

$SPECrate^®2017\_fp\_base = 851$

$SPECrate^®2017\_fp\_peak = 912$

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
uname -a:
   Linux localhost.localdomain 4.18.0-425.3.1.el8.x86_64 #1 SMP Fri Sep 30 11:45:06 EDT
   2022 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
mmio_stale_data:                                      Not affected
retbleed:                                             Not affected
CVE-2018-3639 (Speculative Store Bypass):             Mitigation: Speculative Store
                                                      Bypass disabled via prctl
CVE-2017-5753 (Spectre variant 1):                    Mitigation: usercopy/swapgs
                                                      barriers and __user pointer
                                                      sanitization
CVE-2017-5715 (Spectre variant 2):                    Mitigation: Enhanced IBRS, IBPB:
                                                      conditional, RSB filling,
                                                      PBRSB-eIBRS: SW sequence
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort):              Not affected

run-level 5 Dec 7 03:04

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-ic2022.1
   Filesystem      Type    Size  Used Avail Use% Mounted on
   tmpfs           tmpfs   125G   77G   49G  61% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
    Vendor:          Dell Inc.
    Product:         PowerEdge MX760c
    Product Family:  PowerEdge
    Serial:          MWCFG04

Additional information from dmidecode 3.3 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 MTC40F2046S1RC48BA1 64 GB 2 rank 4800

BIOS:
    BIOS Vendor:      Dell Inc.
    BIOS Version:     0.3.2
    BIOS Date:        11/30/2022
```

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
    BIOS Revision:      0.3

 (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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C++, C               | 511.povray_r(base, peak) 526.blender_r(base, peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
```

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

SPEC CPU®2017 Floating Point Rate Result

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

$SPECrate^{®}2017\_fp\_base = 851$

$SPECrate^{®}2017\_fp\_peak = 912$

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Compiler Version Notes (Continued)

```
--------------------------------------------------------------------------

==========================================================================
Fortran          | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)
                 | 554.roms_r(base, peak)
--------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------


==========================================================================
Fortran, C       | 521.wrf_r(base, peak) 527.cam4_r(base, peak)
--------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Benchmarks using both Fortran and C:
`ifx icx`

Benchmarks using both C and C++:
`icpx icx`

Benchmarks using Fortran, C, and C++:
`icpx icx ifx`

Standard Performance Evaluation Corporation (info@spec.org)
https://www.spec.org/

SPEC CPU®2017 Floating Point Rate Result

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

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 -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 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto -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
-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 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/

SPEC CPU®2017 Floating Point Rate Result

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Base Optimization Flags (Continued)

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
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Peak Compiler Invocation

C benchmarks:
```
icx
```

C++ benchmarks:
```
icpx
```

Fortran benchmarks:
```
ifx
```

Benchmarks using both Fortran and C:
```
ifx icx
```

Benchmarks using both C and C++:
```
icpx icx
```

Benchmarks using Fortran, C, and C++:
```
icpx icx ifx
```

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 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops`

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573		**Test Date:**	Dec-2022
Test Sponsor:	Dell Inc.	**Hardware Availability:**	Feb-2023
Tested by:	Dell Inc.	**Software Availability:**	Nov-2022

Peak Optimization Flags (Continued)

544.nab_r (continued):
`-qopt-mem-layout-trans=4 -qopt-zmm-usage=high -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 -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

554.roms_r: `-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math`
`-flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -nostandard-realloc-lhs`
`-align array32byte -auto -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

Benchmarks using both Fortran and C:

521.wrf_r: `-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast`
`-ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -nostandard-realloc-lhs`
`-align array32byte -auto -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: `-w -m64 -std=c11 -Wl,-z,muldefs`
`-fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX512`
`-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -ljemalloc`
`-L/usr/local/jemalloc64-5.0.1/lib`

526.blender_r: basepeak = yes

(Continued on next page)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge MX760c (Intel Xeon Platinum 8468)

SPECrate®2017_fp_base = 851

SPECrate®2017_fp_peak = 912

CPU2017 License: 6573		**Test Date:**	Dec-2022
Test Sponsor: Dell Inc.		**Hardware Availability:**	Feb-2023
Tested by: Dell Inc.		**Software Availability:**	Nov-2022

Peak Optimization Flags (Continued)

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
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64-revB.html
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.2.html

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

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64-revB.xml
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.2.xml

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.1.8 on 2022-12-06 18:29:48-0500.
Report generated on 2023-01-17 18:39:17 by CPU2017 PDF formatter v6442.
Originally published on 2023-01-17.