



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

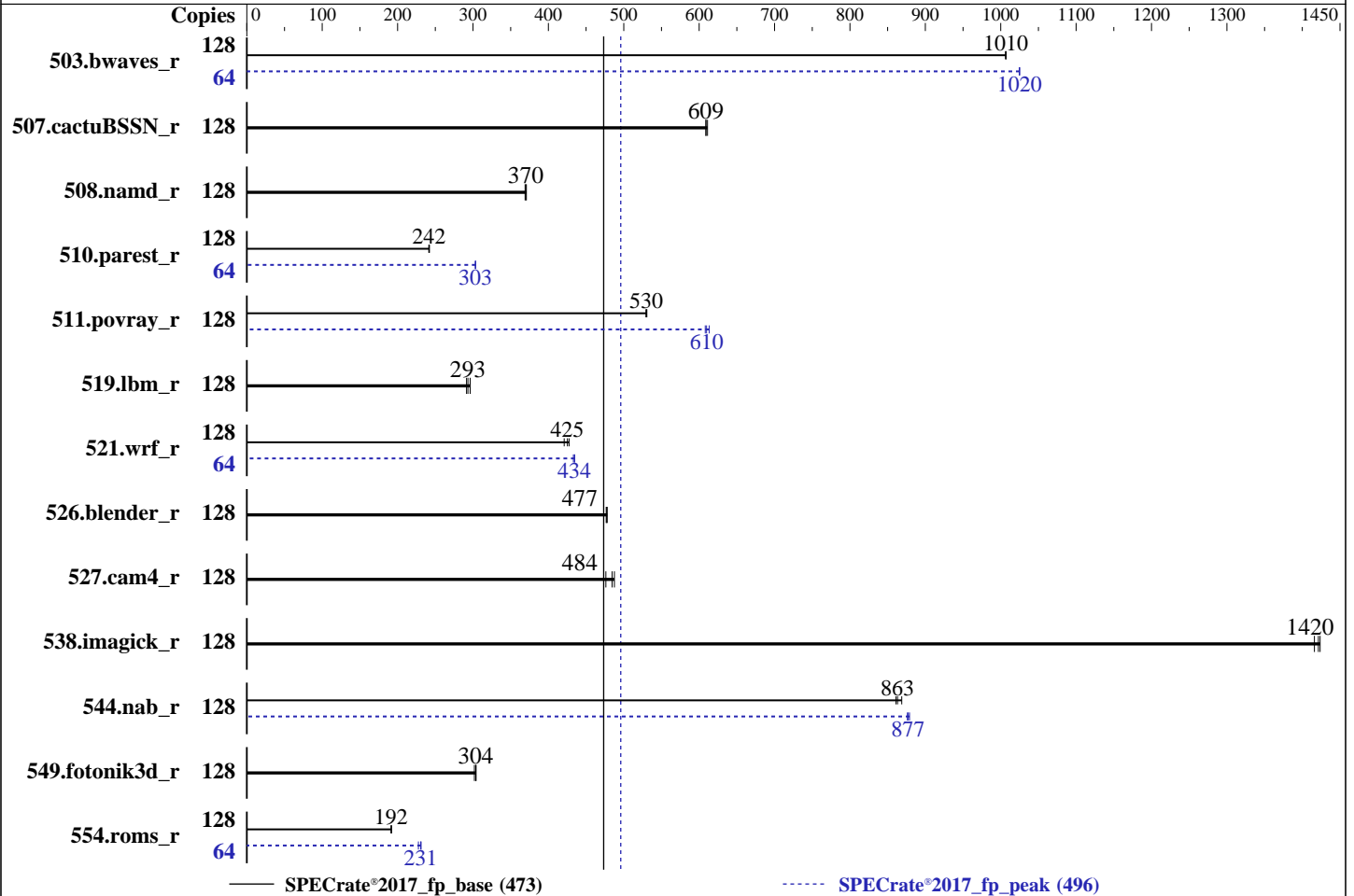
Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021



Hardware

CPU Name: Intel Xeon Gold 6328HL
 Max MHz: 4300
 Nominal: 2800
 Enabled: 64 cores, 4 chips, 2 threads/core
 Orderable: 2,4 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 22 MB I+D on chip per chip
 Other: None
 Memory: 1536 GB (48 x 32 GB 2Rx4 PC4-3200V-R, running at 2933)
 Storage: 1 x 2 TB NVME SSD
 Other: None

Software

OS: Red Hat Enterprise Linux release 8.2 (Ootpa) 4.18.0-193.el8.x86_64
 Compiler: C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;
 C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux;
 Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux
 Parallel: No
 Firmware: Version 05.00.00 released Jun-2021
 File System: xfs
 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

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	128	1275	1010	<u>1275</u>	<u>1010</u>	1275	1010	64	626	1020	626	1030	<u>626</u>	<u>1020</u>
507.cactuBSSN_r	128	265	611	<u>266</u>	<u>609</u>	266	609	128	265	611	<u>266</u>	<u>609</u>	266	609
508.namd_r	128	329	369	<u>329</u>	<u>370</u>	328	371	128	329	369	<u>329</u>	<u>370</u>	328	371
510.parest_r	128	1387	241	<u>1385</u>	<u>242</u>	1382	242	64	<u>552</u>	<u>303</u>	552	303	552	303
511.povray_r	128	565	529	563	531	<u>564</u>	<u>530</u>	128	<u>490</u>	<u>610</u>	487	613	492	608
519.lbm_r	128	<u>460</u>	<u>293</u>	463	291	455	296	128	<u>460</u>	<u>293</u>	463	291	455	296
521.wrf_r	128	681	421	<u>674</u>	<u>425</u>	671	427	64	331	433	330	435	<u>330</u>	<u>434</u>
526.blender_r	128	<u>408</u>	<u>477</u>	409	477	408	478	128	<u>408</u>	<u>477</u>	409	477	408	478
527.cam4_r	128	459	488	<u>462</u>	<u>484</u>	470	476	128	459	488	<u>462</u>	<u>484</u>	470	476
538.imagick_r	128	<u>224</u>	<u>1420</u>	224	1420	225	1420	128	<u>224</u>	<u>1420</u>	224	1420	225	1420
544.nab_r	128	250	861	<u>250</u>	<u>863</u>	248	869	128	246	876	<u>246</u>	<u>877</u>	245	879
549.fotonik3d_r	128	1640	304	<u>1643</u>	<u>304</u>	1652	302	128	1640	304	<u>1643</u>	<u>304</u>	1652	302
554.roms_r	128	1061	192	1062	191	<u>1062</u>	<u>192</u>	64	447	228	<u>441</u>	<u>231</u>	440	231

SPECrate®2017_fp_base = **473**

SPECrate®2017_fp_peak = **496**

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"
SCALING_GOVERNOR set to Performance

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/CPU2017/lib/intel64:/home/CPU2017/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
Prior to runcpu invocation

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

General Notes (Continued)

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>

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.

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>

Platform Notes

BIOS configuration:
ENERGY_PERF_BIAS_CFG mode set to Performance
Hardware Prefetch set to Disable
VT Support set to Disable
C1E Support set to Disable
Sub NUMA Cluster (SNC) set to Enable

Sysinfo program /home/CPU2017/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost.localdomain Wed Nov 10 13:50:19 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 6328HL CPU @ 2.80GHz
4 "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 : 16
siblings : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Platform Notes (Continued)

physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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:   16
Socket(s):            4
NUMA node(s):         8
Vendor ID:            GenuineIntel
CPU family:           6
Model:                85
Model name:           Intel(R) Xeon(R) Gold 6328HL CPU @ 2.80GHz
Stepping:             11
CPU MHz:              3699.982
CPU max MHz:          4300.0000
CPU min MHz:          1000.0000
BogoMIPS:             5600.00
Virtualization:       VT-x
L1d cache:            32K
L1i cache:            32K
L2 cache:             1024K
L3 cache:             22528K
NUMA node0 CPU(s):   0-3,8-11,64-67,72-75
NUMA node1 CPU(s):   4-7,12-15,68-71,76-79
NUMA node2 CPU(s):   16-19,24-27,80-83,88-91
NUMA node3 CPU(s):   20-23,28-31,84-87,92-95
NUMA node4 CPU(s):   32-35,40-43,96-99,104-107
NUMA node5 CPU(s):   36-39,44-47,100-103,108-111
NUMA node6 CPU(s):   48-51,56-59,112-115,120-123
NUMA node7 CPU(s):   52-55,60-63,116-119,124-127

```

```

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
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfmpperf pni pclmulqdq dtes64 ds_cpl vmx 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 cdp_l3 invpcid_single
intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept
vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a
avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl
xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
avx512_bf16 dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_l1d
arch_capabilities

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Platform Notes (Continued)

```
/proc/cpuinfo cache data
cache size : 22528 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 1 2 3 8 9 10 11 64 65 66 67 72 73 74 75
node 0 size: 192072 MB
node 0 free: 183310 MB
node 1 cpus: 4 5 6 7 12 13 14 15 68 69 70 71 76 77 78 79
node 1 size: 193532 MB
node 1 free: 187097 MB
node 2 cpus: 16 17 18 19 24 25 26 27 80 81 82 83 88 89 90 91
node 2 size: 193532 MB
node 2 free: 187103 MB
node 3 cpus: 20 21 22 23 28 29 30 31 84 85 86 87 92 93 94 95
node 3 size: 193532 MB
node 3 free: 187032 MB
node 4 cpus: 32 33 34 35 40 41 42 43 96 97 98 99 104 105 106 107
node 4 size: 193532 MB
node 4 free: 187119 MB
node 5 cpus: 36 37 38 39 44 45 46 47 100 101 102 103 108 109 110 111
node 5 size: 193532 MB
node 5 free: 187115 MB
node 6 cpus: 48 49 50 51 56 57 58 59 112 113 114 115 120 121 122 123
node 6 size: 193504 MB
node 6 free: 187002 MB
node 7 cpus: 52 53 54 55 60 61 62 63 116 117 118 119 124 125 126 127
node 7 size: 193531 MB
node 7 free: 187103 MB
```

```
node distances:
node 0 1 2 3 4 5 6 7
0: 10 11 20 20 20 20 20 20
1: 11 10 20 20 20 20 20 20
2: 20 20 10 11 20 20 20 20
3: 20 20 11 10 20 20 20 20
4: 20 20 20 20 10 11 20 20
5: 20 20 20 20 11 10 20 20
6: 20 20 20 20 20 20 10 11
7: 20 20 20 20 20 20 11 10
```

From /proc/meminfo

```
MemTotal: 1583892092 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/sbin/tuned-adm active

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Platform Notes (Continued)

Current active profile: throughput-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

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

os-release:

NAME="Red Hat Enterprise Linux"

VERSION="8.2 (Ootpa)"

ID="rhel"

ID_LIKE="fedora"

VERSION_ID="8.2"

PLATFORM_ID="platform:el8"

PRETTY_NAME="Red Hat Enterprise Linux 8.2 (Ootpa)"

ANSI_COLOR="0;31"

redhat-release: Red Hat Enterprise Linux release 8.2 (Ootpa)

system-release: Red Hat Enterprise Linux release 8.2 (Ootpa)

system-release-cpe: cpe:/o:redhat:enterprise_linux:8.2:ga

uname -a:

Linux localhost.localdomain 4.18.0-193.el8.x86_64 #1 SMP Fri Mar 27 14:35:58 UTC 2020 x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):	Not affected
CVE-2018-3620 (L1 Terminal Fault):	Not affected
Microarchitectural Data Sampling:	Not affected
CVE-2017-5754 (Meltdown):	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/swapgs 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):	No status reported
CVE-2019-11135 (TSX Asynchronous Abort):	Not affected

run-level 3 Nov 10 06:46

SPEC is set to: /home/CPU2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	1.7T	123G	1.6T	8%	/home

From /sys/devices/virtual/dmi/id

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Platform Notes (Continued)

Vendor: Inspur
 Product: NF8260M6
 Product Family: Family
 Serial: 380152314

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:

48x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200, configured at 2933

BIOS:

BIOS Vendor: American Megatrends Inc.
 BIOS Version: 05.00.00
 BIOS Date: 06/23/2021
 BIOS Revision: 5.19

(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)

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Date: Nov-2021

Test Sponsor: Inspur Corporation

Hardware Availability: Sep-2020

Tested by: Inspur Corporation

Software Availability: Jan-2021

Compiler Version Notes (Continued)

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 | 511.povray_r(peak)

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

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

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

=====
C++, C, Fortran | 507.cactuBSSN_r(base, peak)

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Compiler Version Notes (Continued)

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.

=====
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.
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, C | 521.wrf_r(base) 527.cam4_r(base, peak)
=====

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

=====
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.
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)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Compiler Version Notes (Continued)

Fortran, C | 521.wrf_r(base) 527.cam4_r(base, peak)

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on

Intel(R) 64, Version 2021.1 Build 20201112_000000

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

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Base Portability Flags (Continued)

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
```

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
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

`-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`

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`

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Peak Optimization Flags (Continued)

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
```

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
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Inspur Corporation

SPECrate®2017_fp_base = 473

Inspur NF8260M6 (Intel Xeon Gold 6328HL)

SPECrate®2017_fp_peak = 496

CPU2017 License: 3358

Test Sponsor: Inspur Corporation

Tested by: Inspur Corporation

Test Date: Nov-2021

Hardware Availability: Sep-2020

Software Availability: Jan-2021

Peak Optimization Flags (Continued)

511.povray_r (continued):

```
-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

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

<http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-V2.1.html>

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/Inspur-Platform-Settings-V2.1.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 v1.1.8 on 2021-11-10 13:50:18-0500.

Report generated on 2021-12-07 16:58:27 by CPU2017 PDF formatter v6442.

Originally published on 2021-12-07.