



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

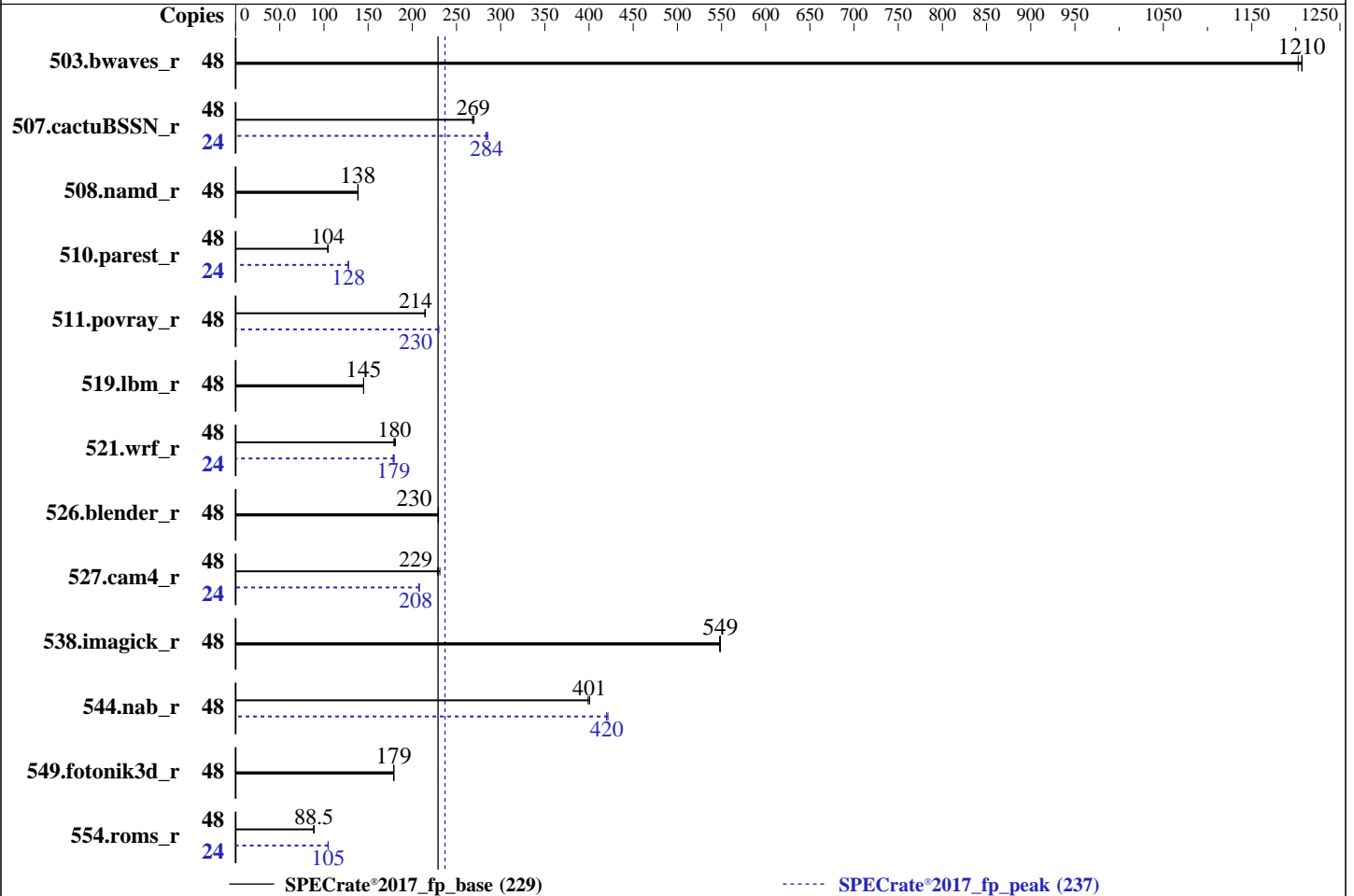
Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022



Hardware

CPU Name: Intel Xeon Gold 6312U
 Max MHz: 3600
 Nominal: 2400
 Enabled: 24 cores, 1 chip, 2 threads/core
 Orderable: 1 chip
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 1.25 MB I+D on chip per core
 L3: 36 MB I+D on chip per chip
 Other: None
 Memory: 512 GB (8 x 64 GB 2Rx4 PC4-3200AA-R)
 Storage: 1 x 1 TB SATA SSD
 Other: None

Software

OS: Red Hat Enterprise Linux release 8.4 (Ootpa)
 4.18.0-305.25.1.el8_4.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 0802 released Apr-2022
 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 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	48	400	1200	<u>399</u>	<u>1210</u>	399	1210	48	400	1200	<u>399</u>	<u>1210</u>	399	1210
507.cactuBSSN_r	48	<u>226</u>	<u>269</u>	225	270	227	268	24	106	285	<u>107</u>	<u>284</u>	107	283
508.namd_r	48	329	138	329	139	<u>329</u>	<u>138</u>	48	329	138	329	139	<u>329</u>	<u>138</u>
510.parest_r	48	1201	105	<u>1202</u>	<u>104</u>	1203	104	24	492	128	492	128	<u>492</u>	<u>128</u>
511.povray_r	48	522	215	<u>523</u>	<u>214</u>	523	214	48	487	230	488	230	<u>488</u>	<u>230</u>
519.lbm_r	48	349	145	349	145	<u>349</u>	<u>145</u>	48	349	145	349	145	<u>349</u>	<u>145</u>
521.wrf_r	48	595	181	<u>597</u>	<u>180</u>	600	179	24	301	178	<u>301</u>	<u>179</u>	299	180
526.blender_r	48	318	230	319	229	<u>318</u>	<u>230</u>	48	318	230	319	229	<u>318</u>	<u>230</u>
527.cam4_r	48	<u>367</u>	<u>229</u>	368	228	363	231	24	202	207	202	208	<u>202</u>	<u>208</u>
538.imagick_r	48	<u>218</u>	<u>549</u>	218	549	218	548	48	<u>218</u>	<u>549</u>	218	549	218	548
544.nab_r	48	202	401	203	399	<u>202</u>	<u>401</u>	48	192	421	192	420	<u>192</u>	<u>420</u>
549.fotonik3d_r	48	<u>1045</u>	<u>179</u>	1046	179	1044	179	48	<u>1045</u>	<u>179</u>	1046	179	1044	179
554.roms_r	48	<u>862</u>	<u>88.5</u>	860	88.7	862	88.5	24	<u>364</u>	<u>105</u>	365	105	364	105

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

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"
OS set to performance mode via cpupower frequency-set -g performance

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/ic22u1/lib/intel64:/home/ic22u1/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
Prior to runcpu invocation
Filesystem page cache synced and cleared with:

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

General Notes (Continued)

```
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:
VT-d = Disabled
Patrol Scrub = Disabled
SNC = Enable SNC2 (2-clusters)
Engine Boost = Aggressive
SR-IOV Support = Disabled
BMC Configuration:
Fan mode = Full speed mode

Sysinfo program /home/ic22u1/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost.localdomain Tue Sep 20 04:54:52 2022

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 6312U CPU @ 2.40GHz
1 "physical id"s (chips)
48 "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 : 24
siblings : 48
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

From lscpu from util-linux 2.32.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Platform Notes (Continued)

```

Byte Order:           Little Endian
CPU(s):               48
On-line CPU(s) list: 0-47
Thread(s) per core:  2
Core(s) per socket:  24
Socket(s):            1
NUMA node(s):         2
Vendor ID:            GenuineIntel
BIOS Vendor ID:       Intel
CPU family:            6
Model:                106
Model name:           Intel(R) Xeon(R) Gold 6312U CPU @ 2.40GHz
BIOS Model name:      Intel(R) Xeon(R) Gold 6312U CPU @ 2.40GHz
Stepping:             6
CPU MHz:              2987.101
CPU max MHz:          3600.0000
CPU min MHz:          800.0000
BogoMIPS:             4800.00
Virtualization:       VT-x
L1d cache:            48K
L1i cache:            32K
L2 cache:             1280K
L3 cache:             36864K
NUMA node0 CPU(s):   0-11,24-35
NUMA node1 CPU(s):   12-23,36-47
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 monitor 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 fl6c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 invpcid_single
intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept
vpid ept_ad fsgsbase 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 xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local split_lock_detect wbnoinvd dtherm ida arat pln pts hwp hwp_act_window
hwp_epp hwp_pkg_req avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid fsrm md_clear pconfig
flush_lld arch_capabilities

```

```

/proc/cpuinfo cache data
cache size : 36864 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 1 2 3 4 5 6 7 8 9 10 11 24 25 26 27 28 29 30 31 32 33 34 35

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Platform Notes (Continued)

```

node 0 size: 257618 MB
node 0 free: 241893 MB
node 1 cpus: 12 13 14 15 16 17 18 19 20 21 22 23 36 37 38 39 40 41 42 43 44 45 46 47
node 1 size: 258003 MB
node 1 free: 247243 MB
node distances:
node    0    1
  0:   10   11
  1:   11   10

```

From /proc/meminfo

```

MemTotal:      527996620 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

/sbin/tuned-adm active

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="8.4 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.4"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.4 (Ootpa)"
ANSI_COLOR="0;31"

```

```

redhat-release: Red Hat Enterprise Linux release 8.4 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.4 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.4:ga

```

uname -a:

```

Linux localhost.localdomain 4.18.0-305.25.1.el8_4.x86_64 #1 SMP Mon Oct 18 14:34:11
EDT 2021 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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Platform Notes (Continued)

```

CVE-2017-5753 (Spectre variant 1):          seccomp
                                             Mitigation: usercopy/swaps
                                             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 Sep 19 05:49

SPEC is set to: /home/ic22u1

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	878G	141G	738G	17%	/home

```

From /sys/devices/virtual/dmi/id
Vendor:          ASUSTeK COMPUTER INC.
Product:         RS720-E10-RS12
Product Family: Server
Serial:          012345678901

```

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:
  8x Samsung M393A8G40AB2-CWE 64 GB 2 rank 3200

```

```

BIOS:
  BIOS Vendor:      American Megatrends Inc.
  BIOS Version:     0802
  BIOS Date:        04/29/2022
  BIOS Revision:    8.2

```

(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.
-----

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Compiler Version Notes (Continued)

=====
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.

=====
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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Compiler Version Notes (Continued)

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

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



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

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
```

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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Peak Compiler Invocation (Continued)

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
-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

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 229

SPECrate®2017_fp_peak = 237

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Sep-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Peak Optimization Flags (Continued)

```
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:

```
-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++:

```
511.povray_r: -w -m64 -std=c11 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(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

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/ASUSTekPlatform-Settings-z12-V1.2.html>

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.html

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

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.xml>

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.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 2022-09-20 04:54:51-0400.

Report generated on 2022-10-12 17:01:51 by CPU2017 PDF formatter v6442.

Originally published on 2022-10-11.