



SPEC® CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006

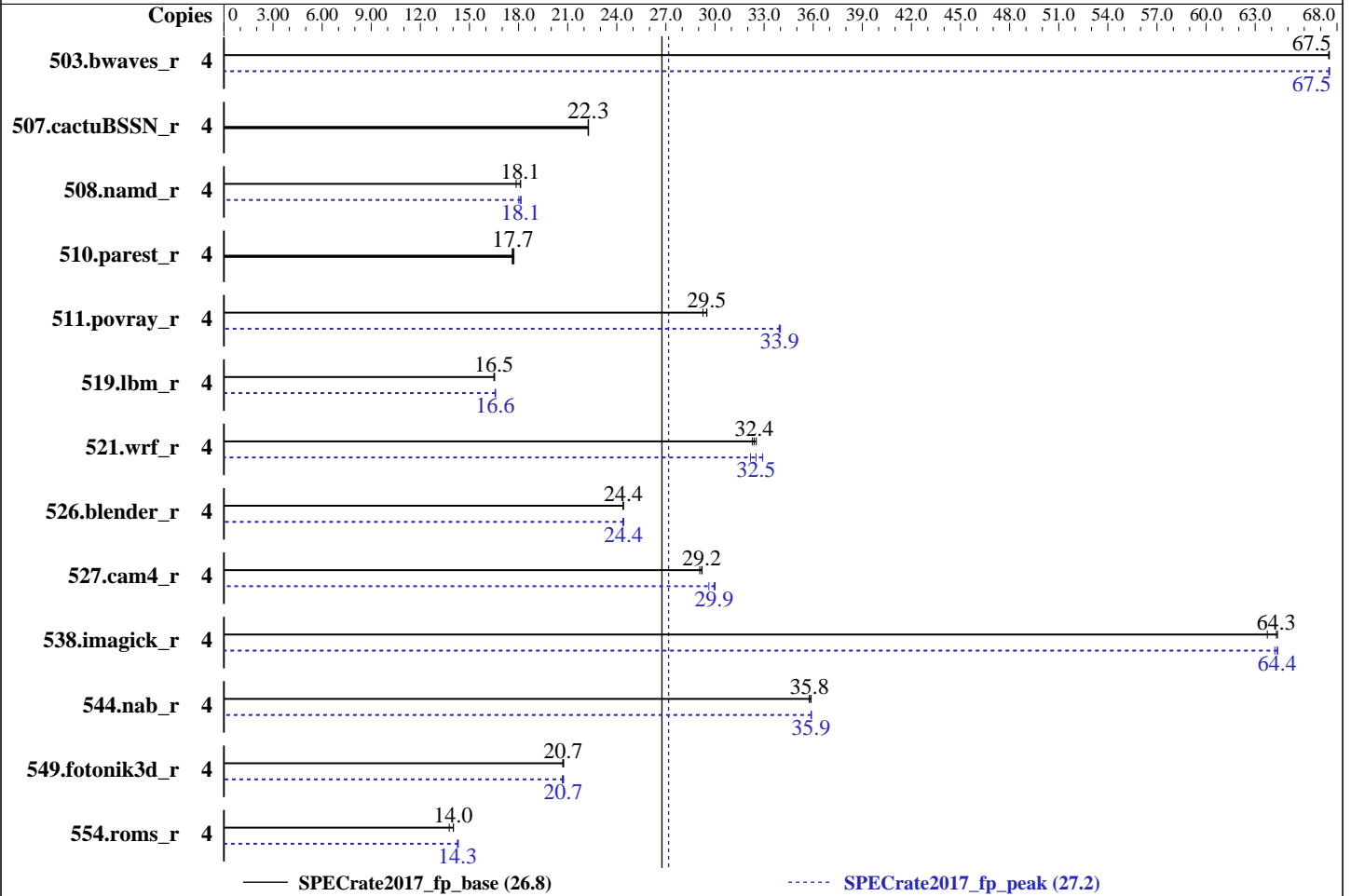
Test Date: Nov-2018

Test Sponsor: NEC Corporation

Hardware Availability: Apr-2017

Tested by: NEC Corporation

Software Availability: Mar-2018



Hardware

CPU Name: Intel Xeon E3-1225 v6
 Max MHz.: 3700
 Nominal: 3300
 Enabled: 4 cores, 1 chip
 Orderable: 1 chip
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 256 KB I+D on chip per core
 L3: 8 MB I+D on chip per chip
 Other: None
 Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2400T-E)
 Storage: 1 x 1 TB SATA, 7200 RPM
 Other: None

Software

OS: Red Hat Enterprise Linux Server release 7.4 (Maipo)
 Kernel 3.10.0-693.21.1.el7.x86_64
 Compiler: C/C++: Version 18.0.2.199 of Intel C/C++ Compiler for Linux;
 Fortran: Version 18.0.2.199 of Intel Fortran Compiler for Linux
 Parallel: No
 Firmware: Version 5.0.4008 06/07/2018 released Aug-2018
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: None



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation

Test Date: Nov-2018
Hardware Availability: Apr-2017
Software Availability: Mar-2018

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	4	594	67.5	594	67.5	594	67.5	4	594	67.5	594	67.5	594	67.6
507.cactuBSSN_r	4	227	22.3	227	22.3	228	22.2	4	227	22.3	227	22.3	228	22.2
508.namd_r	4	210	18.1	210	18.1	213	17.9	4	210	18.1	209	18.2	211	18.0
510.parest_r	4	591	17.7	593	17.7	594	17.6	4	591	17.7	593	17.7	594	17.6
511.povray_r	4	317	29.5	317	29.5	319	29.3	4	275	34.0	275	33.9	275	33.9
519.lbm_r	4	255	16.5	255	16.5	255	16.5	4	254	16.6	254	16.6	255	16.6
521.wrf_r	4	277	32.3	275	32.5	277	32.4	4	272	32.9	279	32.2	276	32.5
526.blender_r	4	250	24.4	250	24.4	250	24.4	4	249	24.4	250	24.4	250	24.4
527.cam4_r	4	241	29.1	239	29.2	240	29.2	4	233	30.0	234	29.9	236	29.6
538.imagick_r	4	156	63.7	155	64.4	155	64.3	4	155	64.2	155	64.4	155	64.4
544.nab_r	4	188	35.8	188	35.9	188	35.8	4	188	35.9	188	35.9	188	35.9
549.fotonik3d_r	4	753	20.7	751	20.8	752	20.7	4	752	20.7	754	20.7	751	20.8
554.roms_r	4	453	14.0	462	13.8	453	14.0	4	444	14.3	445	14.3	445	14.3

SPECrate2017_fp_base = 26.8

SPECrate2017_fp_peak = 27.2

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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"

General Notes

Environment variables set by runcpu before the start of the run:

LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"

Binaries compiled on a system with 1x Intel Core i7-6700K CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.5
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3 > /proc/sys/vm/drop_caches

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation

Test Date: Nov-2018
Hardware Availability: Apr-2017
Software Availability: Mar-2018

General Notes (Continued)

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.

Platform Notes

BIOS Settings:

Power Management Policy: Custom
Energy Performance: Performance
DCU Streamer Prefetcher: Disabled

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on t110i Fri Nov 30 16:02:33 2018

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) CPU E3-1225 v6 @ 3.30GHz
 1 "physical id"s (chips)
 4 "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      : 4
siblings       : 4
physical 0:    cores 0 1 2 3
```

From lscpu:

```
Architecture:    x86_64
CPU op-mode(s):  32-bit, 64-bit
Byte Order:      Little Endian
CPU(s):          4
On-line CPU(s) list:  0-3
Thread(s) per core:  1
Core(s) per socket:  4
Socket(s):       1
NUMA node(s):    1
Vendor ID:       GenuineIntel
CPU family:      6
Model:           158
Model name:      Intel(R) Xeon(R) CPU E3-1225 v6 @ 3.30GHz
Stepping:        9
CPU MHz:         3403.511
```

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation

Test Date: Nov-2018
Hardware Availability: Apr-2017
Software Availability: Mar-2018

Platform Notes (Continued)

CPU max MHz: 3700.0000
CPU min MHz: 800.0000
BogoMIPS: 6624.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node0 CPU(s): 0-3

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 aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 fma cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch epb invpcid_single intel_pt spec_ctrl ibpb_support tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1 dtherm ida arat pln pts hwp hwp_notify hwp_act_window hwp_epp

```
/proc/cpuinfo cache data
cache size : 8192 KB
```

```
From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 1 nodes (0)
node 0 cpus: 0 1 2 3
node 0 size: 65479 MB
node 0 free: 63627 MB
node distances:
node 0
0: 10
```

```
From /proc/meminfo
MemTotal: 65920372 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.4 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.4"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.4 (Maipo)"
```

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation

Test Date: Nov-2018
Hardware Availability: Apr-2017
Software Availability: Mar-2018

Platform Notes (Continued)

```
redhat-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.4 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.4:ga:server
```

uname -a:

```
Linux t110i 3.10.0-693.21.1.el7.x86_64 #1 SMP Fri Feb 23 18:54:16 UTC 2018 x86_64
x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

```
CVE-2017-5754 (Meltdown): Mitigation: PTI
CVE-2017-5753 (Spectre variant 1): Mitigation: Load fences
CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS (kernel)
```

run-level 3 Nov 30 15:56

SPEC is set to: /home/cpu2017

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext4  909G  125G  738G  15% /
```

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. 5.0.4008 06/07/2018

Memory:

4x Micron 18ASF2G72AZ-2G3B1 16 GB 2 rank 2400

(End of data from sysinfo program)

Compiler Version Notes

```
=====  
CC 519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base, peak)  
-----
```

icc (ICC) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

```
=====  
CC 519.lbm_r(peak)  
-----
```

icc (ICC) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation

Test Date: Nov-2018
Hardware Availability: Apr-2017
Software Availability: Mar-2018

Compiler Version Notes (Continued)

=====
CXXC 508.namd_r(base) 510.parest_r(base, peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

=====
CXXC 508.namd_r(peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

=====
CC 511.povray_r(base) 526.blender_r(base, peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

=====
CC 511.povray_r(peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

=====
FC 507.cactuBSSN_r(base, peak)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

=====
FC 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)

ifort (IFORT) 18.0.2 20180210

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation

Test Date: Nov-2018
Hardware Availability: Apr-2017
Software Availability: Mar-2018

Compiler Version Notes (Continued)

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 554.roms_r(peak)

ifort (IFORT) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CC 521.wrf_r(base) 527.cam4_r(base)

ifort (IFORT) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

icc (ICC) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CC 521.wrf_r(peak) 527.cam4_r(peak)

ifort (IFORT) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

icc (ICC) 18.0.2 20180210

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:

icc -m64 -std=c11

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

ifort -m64 icc -m64 -std=c11

Benchmarks using both C and C++:

icpc -m64 icc -m64 -std=c11

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006

Test Sponsor: NEC Corporation

Tested by: NEC Corporation

Test Date: Nov-2018

Hardware Availability: Apr-2017

Software Availability: Mar-2018

Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

```
icpc -m64 icc -m64 -std=c11 ifort -m64
```

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:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3
```

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
```

Benchmarks using both C and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3
```

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006

Test Sponsor: NEC Corporation

Tested by: NEC Corporation

Test Date: Nov-2018

Hardware Availability: Apr-2017

Software Availability: Mar-2018

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
```

Peak Compiler Invocation

C benchmarks:

```
icc -m64 -std=c11
```

C++ benchmarks:

```
icpc -m64
```

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
ifort -m64 icc -m64 -std=c11
```

Benchmarks using both C and C++:

```
icpc -m64 icc -m64 -std=c11
```

Benchmarks using Fortran, C, and C++:

```
icpc -m64 icc -m64 -std=c11 ifort -m64
```

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
519.lbm_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3
```

```
538.imagick_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3
```

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006

Test Sponsor: NEC Corporation

Tested by: NEC Corporation

Test Date: Nov-2018

Hardware Availability: Apr-2017

Software Availability: Mar-2018

Peak Optimization Flags (Continued)

544.nab_r: Same as 538.imagick_r

C++ benchmarks:

508.namd_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

510.parest_r: basepeak = yes

Fortran benchmarks:

503.bwaves_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -auto
-nostandard-realloc-lhs

549.fotonik3d_r: Same as 503.bwaves_r

554.roms_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both Fortran and C:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both C and C++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

526.blender_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3

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-ic18.0-official-linux64.2017-12-21.html>

<http://www.spec.org/cpu2017/flags/NEC-Platform-Settings-110i-RevA.html>



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

SPECrate2017_fp_base = 26.8

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECrate2017_fp_peak = 27.2

CPU2017 License: 9006

Test Date: Nov-2018

Test Sponsor: NEC Corporation

Hardware Availability: Apr-2017

Tested by: NEC Corporation

Software Availability: Mar-2018

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml>

<http://www.spec.org/cpu2017/flags/NEC-Platform-Settings-110i-RevA.xml>

SPEC is a registered trademark 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 CPU2017 v1.0.5 on 2018-11-30 02:02:32-0500.

Report generated on 2018-12-26 12:56:46 by CPU2017 PDF formatter v6067.

Originally published on 2018-12-25.