SPEC® CPU2017 Floating Point Rate Result

NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

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

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

Test Date: Oct-2018
Hardware Availability: Aug-2017
Software Availability: Mar-2018

Hardware

CPU Name: Intel Xeon Platinum 8160
Max MHz.: 3700
Nominal: 2100
Enabled: 48 cores, 2 chips, 2 threads/core
Orderable: 1.2 chips
Cache L1: 32 KB I + 32 KB D on chip per core
L2: 1 MB I+D on chip per core
L3: 33 MB I+D on chip per chip
Other: None
Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
Storage: 1 x 1 TB SATA, 7200 RPM, RAID 0
Other: None

Software

OS: Red Hat Enterprise Linux Server release 7.4 (Maipo)
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: NEC BIOS Version U30 02/15/2018 released Mar-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

**NEC Corporation**

**Express5800/R120h-2M (Intel Xeon Platinum 8160)**

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>9006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>NEC Corporation</td>
</tr>
<tr>
<td>Tested by:</td>
<td>NEC Corporation</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Oct-2018</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Aug-2017</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Mar-2018</td>
</tr>
</tbody>
</table>

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>507.cactuBSSN_r</td>
<td>96</td>
<td>605</td>
<td>201</td>
<td>604</td>
<td>201</td>
<td>605</td>
<td>201</td>
<td>96</td>
<td>605</td>
<td>201</td>
<td>603</td>
<td>201</td>
<td>605</td>
<td>201</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>96</td>
<td>511</td>
<td>178</td>
<td>511</td>
<td>178</td>
<td>512</td>
<td>178</td>
<td>96</td>
<td>508</td>
<td>179</td>
<td>507</td>
<td>180</td>
<td>505</td>
<td>180</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>96</td>
<td>2170</td>
<td>116</td>
<td>2208</td>
<td>114</td>
<td>2215</td>
<td>113</td>
<td>96</td>
<td>2214</td>
<td>113</td>
<td>2182</td>
<td>115</td>
<td>2178</td>
<td>115</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>96</td>
<td>802</td>
<td>280</td>
<td>802</td>
<td>280</td>
<td>802</td>
<td>279</td>
<td>96</td>
<td>684</td>
<td>328</td>
<td>685</td>
<td>327</td>
<td>684</td>
<td>328</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>96</td>
<td>876</td>
<td>116</td>
<td>875</td>
<td>116</td>
<td>875</td>
<td>116</td>
<td>96</td>
<td>858</td>
<td>118</td>
<td>858</td>
<td>118</td>
<td>858</td>
<td>118</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>96</td>
<td>1025</td>
<td>210</td>
<td>1039</td>
<td>207</td>
<td>1032</td>
<td>208</td>
<td>96</td>
<td>1029</td>
<td>209</td>
<td>1028</td>
<td>209</td>
<td>1032</td>
<td>208</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>96</td>
<td>554</td>
<td>264</td>
<td>554</td>
<td>264</td>
<td>556</td>
<td>263</td>
<td>96</td>
<td>554</td>
<td>264</td>
<td>554</td>
<td>264</td>
<td>553</td>
<td>264</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>96</td>
<td>634</td>
<td>265</td>
<td>636</td>
<td>264</td>
<td>636</td>
<td>264</td>
<td>96</td>
<td>627</td>
<td>268</td>
<td>623</td>
<td>270</td>
<td>622</td>
<td>270</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>96</td>
<td>399</td>
<td>599</td>
<td>399</td>
<td>599</td>
<td>399</td>
<td>598</td>
<td>96</td>
<td>399</td>
<td>599</td>
<td>399</td>
<td>599</td>
<td>399</td>
<td>598</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>96</td>
<td>381</td>
<td>424</td>
<td>380</td>
<td>425</td>
<td>379</td>
<td>426</td>
<td>96</td>
<td>379</td>
<td>426</td>
<td>380</td>
<td>426</td>
<td>379</td>
<td>426</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>96</td>
<td>2367</td>
<td>158</td>
<td>2369</td>
<td>158</td>
<td>2370</td>
<td>158</td>
<td>96</td>
<td>2366</td>
<td>158</td>
<td>2370</td>
<td>158</td>
<td>2368</td>
<td>158</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>96</td>
<td>1735</td>
<td>87.9</td>
<td>1727</td>
<td>88.3</td>
<td>1729</td>
<td>88.2</td>
<td>96</td>
<td>1712</td>
<td>89.1</td>
<td>1708</td>
<td>89.3</td>
<td>1711</td>
<td>89.2</td>
</tr>
</tbody>
</table>

**SPECrate2017_fp_base = 222**

**SPECrate2017_fp_peak = 226**

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"

### 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
```

runcpu command invoked through numactl i.e.:

```
numaclt --interleave=all runcpu <etc>
```

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)

(Continued on next page)
SPEC CPU2017 Floating Point Rate Result
Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2018
Tested by: NEC Corporation
Hardware Availability: Aug-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:
Thermal Configuration: Maximum Cooling
Workload Profile: General Throughput Compute
Memory Patrol Scrubbing: Disabled
LLC Dead Line Allocation: Disabled
LLC Prefetch: Enabled
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on r120h2m Sat Oct 6 03:05:53 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) Platinum 8160 CPU @ 2.10GHz
    2 "physical id"s (chips)
    96 "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 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
  physical 1: cores 0 1 2 3 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

From lscpu:
  Architecture: x86_64
  CPU op-mode(s): 32-bit, 64-bit
  Byte Order: Little Endian
  CPU(s): 96
  On-line CPU(s) list: 0-95
  Thread(s) per core: 2
  Core(s) per socket: 24
  Socket(s): 2
  NUMA node(s): 4
  Vendor ID: GenuineIntel
  CPU family: 6

(Continued on next page)
SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2018
Hardware Availability: Aug-2017
Tested by: NEC Corporation
Software Availability: Mar-2018

Platform Notes (Continued)

Model: 85
Model name: Intel(R) Xeon(R) Platinum 8160 CPU @ 2.10GHz
Stepping: 4
CPU MHz: 2100.000
BogoMIPS: 4200.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 33792K
NUMA node0 CPU(s): 0-11, 48-59
NUMA node1 CPU(s): 12-23, 60-71
NUMA node2 CPU(s): 24-35, 72-83
NUMA node3 CPU(s): 36-47, 84-95
Flags: fpu vme de pse tsc msr pae mce cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pmp x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch pb xsaveopt xsavec xgetbv1

From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.

Available: 4 nodes (0-3)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 48 49 50 51 52 53 54 55 56 57 58 59
node 0 size: 97963 MB
node 0 free: 95464 MB
node 1 cpus: 12 13 14 15 16 17 18 19 20 21 22 23 60 61 62 63 64 65 66 67 68 69 70 71
node 1 size: 98304 MB
node 1 free: 95948 MB
node 2 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 72 73 74 75 76 77 78 79 80 81 82 83
node 2 size: 98304 MB
node 2 free: 96084 MB
node 3 cpus: 36 37 38 39 40 41 42 43 44 45 46 47 84 85 86 87 88 89 90 91 92 93 94 95
node 3 size: 98303 MB
node 3 free: 96081 MB
node distances:
node 0: 10 21 31 31
node 1: 21 10 31 31

(Continued on next page)
SPEC CPU2017 Floating Point Rate Result

NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2018
Hardware Availability: Aug-2017

Tested by: NEC Corporation
Software Availability: Mar-2018

Platform Notes (Continued)

2: 31 31 10 21
3: 31 31 21 10

From /proc/meminfo
MemTotal: 395919400 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)"
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 r120h2m 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 Oct 6 03:00

SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 909G 469G 394G 55% /

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 NEC U30 02/15/2018
Memory:
24x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666

(End of data from sysinfo program)
NEC Corporation
Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPEC CPU2017 Floating Point Rate Result

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

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.

==============================================================================
CXXC 508.namd_r(base) 510.parest_r(base, peak)
------------------------------------------------------------------------------
icpcc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
CXXC 508.namd_r(peak)
------------------------------------------------------------------------------
icpcc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
CC  511.povray_r(base) 526.blender_r(base, peak)
------------------------------------------------------------------------------
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
iicc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
CC  511.povray_r(peak)
------------------------------------------------------------------------------
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
iicc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

(Continued on next page)
NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPEC CPU2017 Floating Point Rate Result
Copyright 2017-2018 Standard Performance Evaluation Corporation

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2018
Hardware Availability: Aug-2017
Tested by: NEC Corporation
Software Availability: Mar-2018

Compiler Version Notes (Continued)

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
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

(Continued on next page)
SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Tested by: NEC Corporation
Test Date: Oct-2018
Hardware Availability: Aug-2017
Software Availability: Mar-2018

Base Compiler Invocation (Continued)

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

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 -03 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -03 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

(Continued on next page)
NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2018
Tested by: NEC Corporation
Hardware Availability: Aug-2017
Software Availability: Mar-2018

Base Optimization Flags (Continued)

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

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
SPEC CPU2017 Floating Point Rate Result

NEC Corporation

Express5800/R120h-2M (Intel Xeon Platinum 8160)

SPECrate2017_fp_base = 222
SPECrate2017_fp_peak = 226

CPU2017 License: 9006
Test Sponsor: NEC Corporation
Test Date: Oct-2018
Tested by: NEC Corporation
Hardware Availability: Aug-2017
Software Availability: Mar-2018

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: basepeak = yes

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

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

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

(Continued on next page)
## NEC Corporation

**Express5800/R120h-2M (Intel Xeon Platinum 8160)**

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>SPECrate2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>222</td>
<td>226</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 9006  
**Test Sponsor:** NEC Corporation  
**Tested by:** NEC Corporation  
**Test Date:** Oct-2018  
**Hardware Availability:** Aug-2017  
**Software Availability:** Mar-2018

### Peak 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

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


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

- [http://www.spec.org/cpu2017/flags/NEC-Platform-Settings-V1.2-R120h-RevB.xml](http://www.spec.org/cpu2017/flags/NEC-Platform-Settings-V1.2-R120h-RevB.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 2018-10-05 14:05:53-0400.  
Originally published on 2018-10-30.