### SPEC CPU®2017 Floating Point Speed Result

**Hewlett Packard Enterprise**  
*(Test Sponsor: HPE)*  
ProLiant DL385 Gen10 Plus  
*(2.80 GHz, AMD EPYC 7282)*

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>107</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak</td>
<td>107</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE  
**Test Date:** Mar-2020  
**Hardware Availability:** Dec-2019  
**Software Availability:** Aug-2019

#### Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>32</td>
<td>32</td>
<td>180</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>32</td>
<td>32</td>
<td>35.1</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>32</td>
<td>32</td>
<td>137</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>32</td>
<td>32</td>
<td>53.2</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>32</td>
<td>32</td>
<td>69.4</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>32</td>
<td>32</td>
<td>65.9</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>32</td>
<td>32</td>
<td>137</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>32</td>
<td>32</td>
<td>187</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>32</td>
<td>32</td>
<td>129</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>32</td>
<td>32</td>
<td>131</td>
</tr>
</tbody>
</table>

#### Hardware

- **CPU Name:** AMD EPYC 7282  
- **Max MHz:** 3200  
- **Nominal:** 2800  
- **Enabled:** 32 cores, 2 chips  
- **Orderable:** 1, 2 chips  
- **Cache L1:** 32 KB I + 32 KB D on chip per core  
- **L2:** 512 KB I+D on chip per core  
- **L3:** 64 MB I+D on chip per chip, 16 MB shared / 4 cores  
- **Other:**  
- **Memory:** 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)  
- **Storage:** 1 x 800 GB SAS SSD, RAID 0  
- **Other:** None

#### Software

- **OS:** SUSE Linux Enterprise Server 15 (x86_64) SP1  
- **Kernel:** 4.12.14-195-default  
- **Compiler:** C/C++/Fortran: Version 2.0.0 of AOCC  
- **Parallel:** Yes  
- **Firmware:** HPE BIOS Version A42 12/12/2019 released Dec-2019  
- **File System:** btrfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 64-bit  
- **Other:** jemalloc: jemalloc memory allocator library v5.2.0  
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage
SPEC CPU®2017 Floating Point Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
(2.80 GHz, AMD EPYC 7282)

Copyright 2017-2020 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
(2.80 GHz, AMD EPYC 7282)

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>32</td>
<td>179</td>
<td>329</td>
<td>180</td>
<td>328</td>
<td>180</td>
<td>327</td>
<td>180</td>
<td>328</td>
<td>180</td>
<td>327</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>32</td>
<td>95.5</td>
<td>175</td>
<td>92.6</td>
<td>180</td>
<td>92.1</td>
<td>181</td>
<td>92.6</td>
<td>180</td>
<td>92.1</td>
<td>181</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>32</td>
<td>149</td>
<td>35.2</td>
<td>149</td>
<td>35.1</td>
<td>149</td>
<td>35.1</td>
<td>149</td>
<td>35.1</td>
<td>149</td>
<td>35.1</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>32</td>
<td>117</td>
<td>113</td>
<td>117</td>
<td>113</td>
<td>117</td>
<td>113</td>
<td>117</td>
<td>113</td>
<td>117</td>
<td>113</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>32</td>
<td>128</td>
<td>69.3</td>
<td>128</td>
<td>69.4</td>
<td>128</td>
<td>69.4</td>
<td>128</td>
<td>69.4</td>
<td>128</td>
<td>69.4</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>32</td>
<td>223</td>
<td>53.3</td>
<td>224</td>
<td>53.1</td>
<td>223</td>
<td>53.2</td>
<td>223</td>
<td>53.2</td>
<td>223</td>
<td>53.2</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>32</td>
<td>105</td>
<td>137</td>
<td>106</td>
<td>136</td>
<td>106</td>
<td>137</td>
<td>106</td>
<td>137</td>
<td>106</td>
<td>137</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>32</td>
<td>93.4</td>
<td>187</td>
<td>93.3</td>
<td>187</td>
<td>93.2</td>
<td>187</td>
<td>93.3</td>
<td>187</td>
<td>93.2</td>
<td>187</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>32</td>
<td>138</td>
<td>66.0</td>
<td>138</td>
<td>65.9</td>
<td>139</td>
<td>65.8</td>
<td>138</td>
<td>65.9</td>
<td>139</td>
<td>65.8</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>32</td>
<td>123</td>
<td>128</td>
<td>122</td>
<td>129</td>
<td>122</td>
<td>129</td>
<td>122</td>
<td>129</td>
<td>122</td>
<td>129</td>
</tr>
</tbody>
</table>

SPECspeed®2017_fp_base = 107
SPECspeed®2017_fp_peak = 107

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

Compiler Notes

The AMD64 AOC Compiler Suite is available at http://developer.amd.com/amd-aocc/

Submit Notes

The config file option 'submit' was used. 'numactl' was used to bind copies to the cores. See the configuration file for details.

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152' was used to set environment locked pages in memory limit
runcpu command invoked through numactl i.e.: numactl --interleave=all runcpu <etc>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory sync then drop_caches=3 to reset caches before invoking runcpu

dirty_ratio, swappiness, zone_reclaim_mode and drop_caches were all set using privileged echo (e.g. echo 1 > /proc/sys/vm/swappiness).

Transparent huge pages set to 'always' for this run (OS default)
Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH =
   "/home/cpu2017-bbn/amd_speed_aocc200_rome_C_lib/64;/home/cpu2017-bbn/amd_speed_aocc200_rome_C_lib/32;"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "32"

Environment variables set by runcpu during the 638.imagick_s peak run:
GOMP_CPU_AFFINITY = "0-31"

Environment variables set by runcpu during the 654.roms_s peak run:
GOMP_CPU_AFFINITY = "0-31"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using Fedora 26

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: configured and built with GCC v9.1.0 in Ubuntu 19.04 with -03 -znver2 -flto
jemalloc 5.2.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.2.0/jemalloc-5.2.0.tar.bz2

Platform Notes

BIOS Configuration
Thermal Configuration set to Maximum Cooling
AMD SMT Mode set to Disabled
Determinism Control set to Manual
Performance Determinism set to Power Deterministic
Minimum Processor Idle Power core C-State set to C6 State
Memory Patrol Scrubbing set to Disabled
Workload Profile set to General Peak Frequency Compute
NUMA memory domains per socket set to One memory domain per socket

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
(2.80 GHz, AMD EPYC 7282)

SPECspeed®2017_fp_base = 107
SPECspeed®2017_fp_peak = 107

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Platform Notes (Continued)

Power Regulator Set to OS Control Mode

Sysinfo program /home/cpu2017-bbn/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edbe6e46a485a001
running on linux-30t0 Fri Feb 15 01:17:58 2019

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: AMD EPYC 7282 16-Core Processor
  2 "physical id"s (chips)
  32 "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: 16
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

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 48 bits physical, 48 bits virtual
CPU(s): 32
On-line CPU(s) list: 0-31
Thread(s) per core: 1
Core(s) per socket: 16
Socket(s): 2
NUMA node(s): 2
Vendor ID: AMD
CPU family: 23
Model: 49
Model name: AMD EPYC 7282 16-Core Processor
Stepping: 0
CPU MHz: 2800.000
CPU max MHz: 2800.0000
CPU min MHz: 1500.0000
BogoMIPS: 5589.64
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 16384K
NUMA node0 CPU(s): 0-15

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
(2.80 GHz, AMD EPYC 7282)

SPECspeed®2017_fp_base = 107
SPECspeed®2017_fp_peak = 107

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Platform Notes (Continued)

NUMA node1 CPU(s): 16-31
Flags:

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

From /proc/meminfo

From /proc/cpuinfo
cache data

cache size: 512 KB

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

uname -a:

(Continued on next page)
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL385 Gen10 Plus  
(2.80 GHz, AMD EPYC 7282)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

SPECspeed®2017_fp_base = 107
SPECspeed®2017_fp_peak = 107

Platform Notes (Continued)

Linux linux-30t0 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)  
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

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: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling

run-level 3 Feb 14 19:51

SPEC is set to: /home/cpu2017-bbn

Filesystem Type Size Used Avail Use% Mounted on
/dev/sdc2 btrfs 743G 26G 717G 4% /home

From /sys/devices/virtual/dmi/id
BIOS:  HPE A42 12/12/2019
Vendor:  HPE
Product: ProLiant DL385 Gen10 Plus
Product Family: ProLiant
Serial:  CN79310517

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.

Memory:
16x Micron 36ASF8G72PZ-3G2B2 64 GB 2 rank 3200
16x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C                               619.lbm_s(base, peak) 638.imagick_s(base, peak)
                               644.nab_s(base, peak)
==============================================================================

AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
AOCCL_2_0_0-Build#191) (based on LLVM AOCCLLVM.2.0.0.B191.2019_07_19)

(Continued on next page)
Compiler Version Notes (Continued)

Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

C++, C, Fortran  | 607.cactuBSSN_s(base, peak)
AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
      AOCCL2_0_0-Build#191) (based on LLVM AOCCLLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
      AOCCL2_0_0-Build#191) (based on LLVM AOCCLLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

Fortran  | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
         | 654.roms_s(base, peak)
AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
      AOCCL2_0_0-Build#191) (based on LLVM AOCCLLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

Fortran, C  | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
            | 628.pop2_s(base, peak)
AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
      AOCCL2_0_0-Build#191) (based on LLVM AOCCLLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
(Continued on next page)
Compiler Version Notes (Continued)

Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

Base Compiler Invocation

C benchmarks:
clang

Fortran benchmarks:
flang

Benchmarks using both Fortran and C:
flang clang

Benchmarks using Fortran, C, and C++:
clang++ clang flang

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
627.cam4_s: -DSPEC_CASE_FLAG -DSPEC_LP64
628.pop2_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
628.pop2_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-flto -Wl,-mlllvm -Wl,-function-specialize
-Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-vector-library=LIBMVEC
-Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
-march=znver2 -fstruct-layout=3 -mlllvm -unroll-threshold=50
-freemap-arrays -mlllvm -function-specialize -mlllvm -enable-gvn-hoist
-mlllvm -reduce-array-computations=3 -mlllvm -global-vectorize-slp

(Continued on next page)
Base Optimization Flags (Continued)

C benchmarks (continued):
-mlvm -vector-library=LIBMVEC -mlvm -inline-threshold=1000
-flv-function-specialization -z muldefs -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
-llflang

Fortran benchmarks:
-flt o -W1, -mlvm -W1, -function-specialize
-W1, -mlvm -W1, -region-vectorize -W1, -mlvm -W1, -vector-library=LIBMVEC
-W1, -mlvm -W1, -reduce-array-computations=3 -O3 -march=znver2
-funroll-loops -Mrecursive -mlvm -vector-library=LIBMVEC -z muldefs
-Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp -fopenmp=libomp
-lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -llflang

Benchmarks using both Fortran and C:
-flt o -W1, -mlvm -W1, -function-specialize
-W1, -mlvm -W1, -region-vectorize -W1, -mlvm -W1, -vector-library=LIBMVEC
-W1, -mlvm -W1, -reduce-array-computations=3 -O3 -ffast-math
-march=znver2 -fstruct-layout=3 -mlvm -unroll-threshold=50
-fremap-arrays -mlvm -function-specialize -mlvm -enable-gvn-hoist
-mlvm -reduce-array-computations=3 -mlvm -global-vectorize-slp
-mlvm -vector-library=LIBMVEC -mlvm -inline-threshold=1000
-flv-function-specialization -funroll-loops -Mrecursive -z muldefs
-Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp -fopenmp=libomp
-lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -llflang

Benchmarks using Fortran, C, and C++:
-std=c++98 -flt o -W1, -mlvm -W1, -function-specialize
-W1, -mlvm -W1, -region-vectorize -W1, -mlvm -W1, -vector-library=LIBMVEC
-W1, -mlvm -W1, -reduce-array-computations=3
-W1, -mlvm -W1, -suppress-fmas -O3 -ffast-math -march=znver2
-fstruct-layout=3 -mlvm -unroll-threshold=50 -fremap-arrays
-mlvm -function-specialize -mlvm -enable-gvn-hoist
-mlvm -reduce-array-computations=3 -mlvm -global-vectorize-slp
-mlvm -vector-library=LIBMVEC -mlvm -inline-threshold=1000
-flv-function-specialization -mlvm -loop-unswitch-threshold=200000
-mlvm -unroll-threshold=100 -mlvm -enable-partial-unswitch
-funroll-loops -Mrecursive -z muldefs -Kieee -fno-finite-math-only
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lpthread -ldl -lmvec
-lamdlibm -ljemalloc -llflang
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL385 Gen10 Plus  
(2.80 GHz, AMD EPYC 7282)  

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base = 107</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak = 107</td>
</tr>
</tbody>
</table>

CPU2017 License: 3  
Test Sponsor: HPE  
Tested by: HPE

Test Date: Mar-2020  
Hardware Availability: Dec-2019  
Software Availability: Aug-2019

Base Other Flags

C benchmarks:  
-Wno-return-type -DUSE_OPENMP

Fortran benchmarks:  
-DUSE_OPENMP -Wno-return-type

Benchmarks using both Fortran and C:  
-DUSE_OPENMP -Wno-return-type

Benchmarks using Fortran, C, and C++:  
-Wno-return-type -DUSE_OPENMP

Peak Compiler Invocation

C benchmarks:  
clang

Fortran benchmarks:  
flang

Benchmarks using both Fortran and C:  
flang clang

Benchmarks using Fortran, C, and C++:  
clang++ clang flang

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:  
619.lbm_s: basepeak = yes

638.imagick_s: -flto -Wl,-mlvm -Wl,-function-specialize  
-Wl,-mlvm -Wl,-region-vectorize

-Wl,-mlvm -Wl,-vector-library=LIBMVEC

-Wl,-mlvm -Wl,-reduce-array-computations=3 -Ofast

(Continued on next page)
Peak Optimization Flags (Continued)

638.imagick_s (continued):
\-march=znver2 \-mno-sse4a \-fstruct-layout=5
\-mllvm \-vectorize-memory-aggressively
\-mllvm \-function-specialize \-mllvm \-enable-gvn-hoist
\-mllvm \-unroll-threshold=50 \-fremap-arrays
\-mllvm \-vector-library=LIBMVEC
\-mllvm \-reduce-array-computations=3
\-mllvm \-global-vectorize-slp \-mllvm \-inline-threshold=1000
\-fly-function-specialization \-DSPEC_OPENMP \-fopenmp
\-lmvec \-lamdlibm \-fopenmp=libomp \-lomp \-lpthread \-ldl
\-ljemalloc \-lflang

644.nab_s: basepeak = yes

Fortran benchmarks:

603.bwaves_s: basepeak = yes
649.fotonik3d_s: basepeak = yes

654.roms_s: \-flto \-Wl,\-mlltvm \-Wl,\-function-specialize
\-Wl,\-mlltvm \-Wl,\-region-vectorize
\-Wl,\-mlltvm \-Wl,\-vector-library=LIBMVEC
\-Wl,\-mlltvm \-Wl,\-reduce-array-computations=3
\-Wl,\-mlltvm \-Wl,\-enable-X86-prefetching \-O3 \-march=znver2
\-funroll-loops \-Mrecursive \-mlltvm \-vector-library=LIBMVEC
\-Kieee \-fno-finite-math-only \-DSPEC_OPENMP \-fopenmp
\-fopenmp=libomp \-lomp \-lpthread \-ldl \-lmvec \-lamdlibm
\-ljemalloc \-lflang

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes
627.cam4_s: basepeak = yes
628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes
# SPEC CPU®2017 Floating Point Speed Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL385 Gen10 Plus  
(2.80 GHz, AMD EPYC 7282)  

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>107</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak</td>
<td>107</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE  
**Test Date:** Mar-2020  
**Hardware Availability:** Dec-2019  
**Software Availability:** Aug-2019

## Peak Other Flags

C benchmarks:  
- `-Wno-return-type -DUSE_OPENMP`

Fortran benchmarks:  
- `-DUSE_OPENMP -Wno-return-type`

Benchmarks using both Fortran and C:  
- `-DUSE_OPENMP -Wno-return-type`

Benchmarks using Fortran, C, and C++:  
- `-Wno-return-type -DUSE_OPENMP`

The flags files that were used to format this result can be browsed at  
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revH.html

You can also download the XML flags sources by saving the following links:  
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revH.xml

---

SPEC CPU and SPECspeed 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 v1.1.0 on 2019-02-14 14:47:58-0500.  
Report generated on 2020-04-14 14:07:29 by CPU2017 PDF formatter v6255.  
Originally published on 2020-04-14.