



SPEC® CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

CPU2017 License: 3

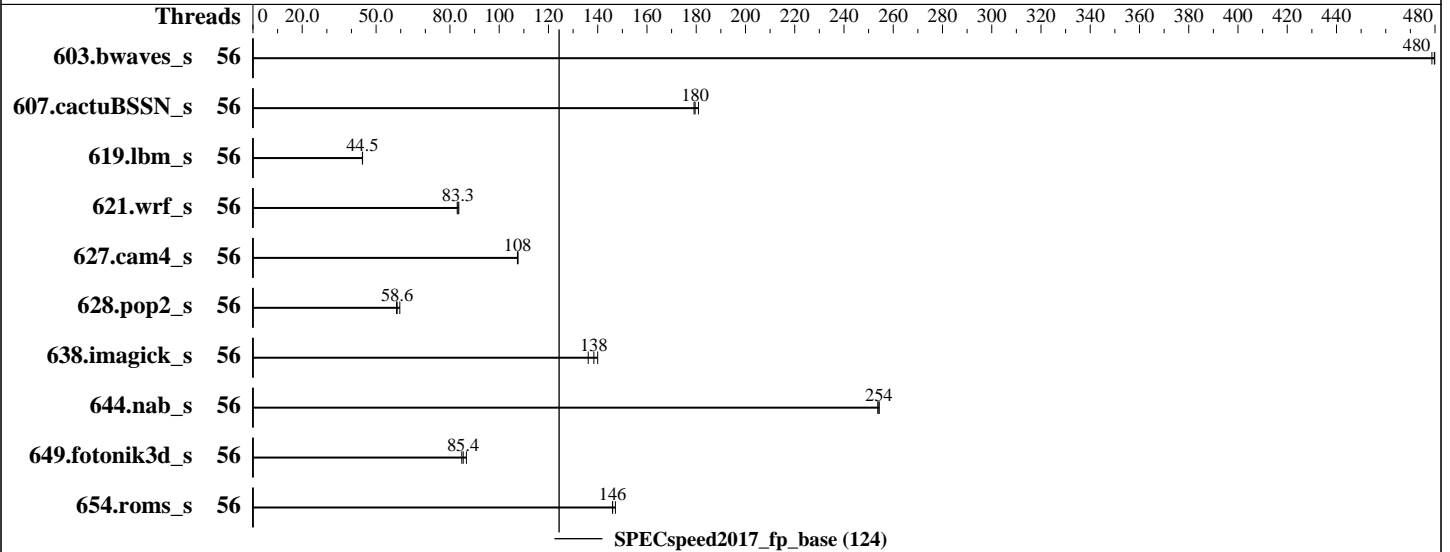
Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017



Hardware

CPU Name: Intel Xeon Platinum 8176
 Max MHz.: 3800
 Nominal: 2100
 Enabled: 56 cores, 2 chips
 Orderable: 1, 2 chip(s)
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 38.5 MB I+D on chip per chip
 Other: None
 Memory: 192 GB (24 x 8 GB 2Rx8 PC4-2666V-R)
 Storage: 1 x 960 GB SATA SSD, RAID 0
 Other: None

Software

OS: Red Hat Enterprise Linux Server 7.3 (Maipo),
 Kernel 3.10.0-514.6.1.el7.x86_64
 Compiler: C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux;
 Fortran: Version 18.0.0.128 of Intel Fortran Compiler for Linux
 Parallel: Yes
 Firmware: HPE BIOS Version U30 released Oct-2017 (tested with U30 9/29/2017)
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other: None



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

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

Test Date: Sep-2017
Hardware Availability: Oct-2017
Software Availability: Sep-2017

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	56	123	480	<u>123</u>	<u>480</u>	123	479							
607.cactuBSSN_s	56	92.1	181	93.1	179	<u>92.8</u>	<u>180</u>							
619.lbm_s	56	118	44.4	118	44.5	<u>118</u>	<u>44.5</u>							
621.wrf_s	56	<u>159</u>	<u>83.3</u>	158	83.6	159	82.9							
627.cam4_s	56	<u>82.4</u>	<u>108</u>	82.5	107	82.4	108							
628.pop2_s	56	199	59.6	204	58.3	<u>203</u>	<u>58.6</u>							
638.imagick_s	56	103	140	106	136	<u>104</u>	<u>138</u>							
644.nab_s	56	68.7	254	<u>68.7</u>	<u>254</u>	68.9	254							
649.fotonik3d_s	56	105	86.7	<u>107</u>	<u>85.4</u>	108	84.8							
654.roms_s	56	107	147	<u>108</u>	<u>146</u>	108	146							

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled by default
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
irqbalance disabled with "systemctl stop irqbalance"
tuned profile set with "tuned-adm profile throughput-performance"
```

General Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=core,compact"
LD_LIBRARY_PATH = "/spec2017/lib/ia32:/spec2017/lib/intel64:/spec2017/je5.0.1-32:/spec2017/je5.0.1-64"
OMP_STACKSIZE = "192M"
```

```
Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.4
```

Platform Notes

```
BIOS Configuration:
Intel Hyperthreading set to Disabled
Thermal Configuration set to Maximum Cooling
Memory Patrol Scrubbing set to Disabled
LLC Prefetcher set to Enabled
LLC Dead Line Allocation set to Disabled
Workload Pofile set to General Peak Frequency Compute
Energy/Performance Bias set to Maximum Performance
```

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

Platform Notes (Continued)

Uncore Frequency Scaling set to Auto
Workload Profile set to General Peak Frequency Compute
NUMA Group Size Optimization set to Flat

Sysinfo program /spec2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on sl-8176-RHEL73U Fri Sep 29 12:01:00 2017

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 8176 CPU @ 2.10GHz
 2 "physical id"s (chips)
 56 "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    : 28
  siblings     : 28
 physical 0:   cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
                28 29 30
 physical 1:   cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
                28 29 30
```

```
From lscpu:
Architecture:    x86_64
CPU op-mode(s):  32-bit, 64-bit
Byte Order:      Little Endian
CPU(s):          56
On-line CPU(s) list:  0-55
Thread(s) per core:  1
Core(s) per socket:  28
Socket(s):       2
NUMA node(s):    2
Vendor ID:       GenuineIntel
CPU family:      6
Model:           85
Model name:      Intel(R) Xeon(R) Platinum 8176 CPU @ 2.10GHz
Stepping:        4
CPU MHz:         2100.000
BogoMIPS:        4204.77
Virtualization:  VT-x
L1d cache:       32K
L1i cache:       32K
L2 cache:        1024K
L3 cache:        39424K
```

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

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

Test Date: Sep-2017
Hardware Availability: Oct-2017
Software Availability: Sep-2017

Platform Notes (Continued)

NUMA node0 CPU(s): 0-27
NUMA node1 CPU(s): 28-55

/proc/cpuinfo cache data
cache size : 39424 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 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
node 0 size: 97963 MB
node 0 free: 94111 MB
node 1 cpus: 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55
node 1 size: 98303 MB
node 1 free: 95448 MB
node distances:
node  0  1
  0:  10  21
  1:  21  10
```

From /proc/meminfo
MemTotal: 197569032 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

uname -a:
Linux s1-8176-RHEL73U 3.10.0-514.6.1.el7.x86_64 #1 SMP Sat Dec 10 11:15:38 EST 2016
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 29 09:29

SPEC is set to: /spec2017

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

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

Test Date: Sep-2017
Hardware Availability: Oct-2017
Software Availability: Sep-2017

Platform Notes (Continued)

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sdb4	xfs	889G	28G	862G	4%	/

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 HPE U30 09/29/2017

Memory:

24x UNKNOWN NOT AVAILABLE 8 GB 2 rank 2666

(End of data from sysinfo program)

Compiler Version Notes

=====
CC 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)

icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

=====
FC 607.cactuBSSN_s(base)

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

=====
FC 603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

=====
CC 621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
icc (ICC) 18.0.0 20170811

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

Compiler Version Notes (Continued)

Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:

icc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

ifort icc

Benchmarks using Fortran, C, and C++:

icpc icc ifort

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
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:

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

Fortran benchmarks:

-DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-nostandard-realloc-lhs -align array32byte

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL380 Gen10

(2.10 GHz, Intel Xeon Platinum 8176)

SPECspeed2017_fp_base = 124

SPECspeed2017_fp_peak = Not Run

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2017

Hardware Availability: Oct-2017

Software Availability: Sep-2017

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte
```

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte
```

Base Other Flags

C benchmarks:

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

Fortran benchmarks:

```
-m64
```

Benchmarks using both Fortran and C:

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

Benchmarks using Fortran, C, and C++:

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

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-10-19.html>

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revD.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-10-19.xml>

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revD.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 v1.0.2 on 2017-09-29 13:01:00-0400.

Report generated on 2018-10-31 14:23:37 by CPU2017 PDF formatter v6067.

Originally published on 2017-10-18.