



SPEC® CFP2006 Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL580 Gen10
(2.50 GHz, Intel Xeon Platinum 8180)

SPECfp®2006 = Not Run

SPECfp_base2006 = 143

CPU2006 license: 3

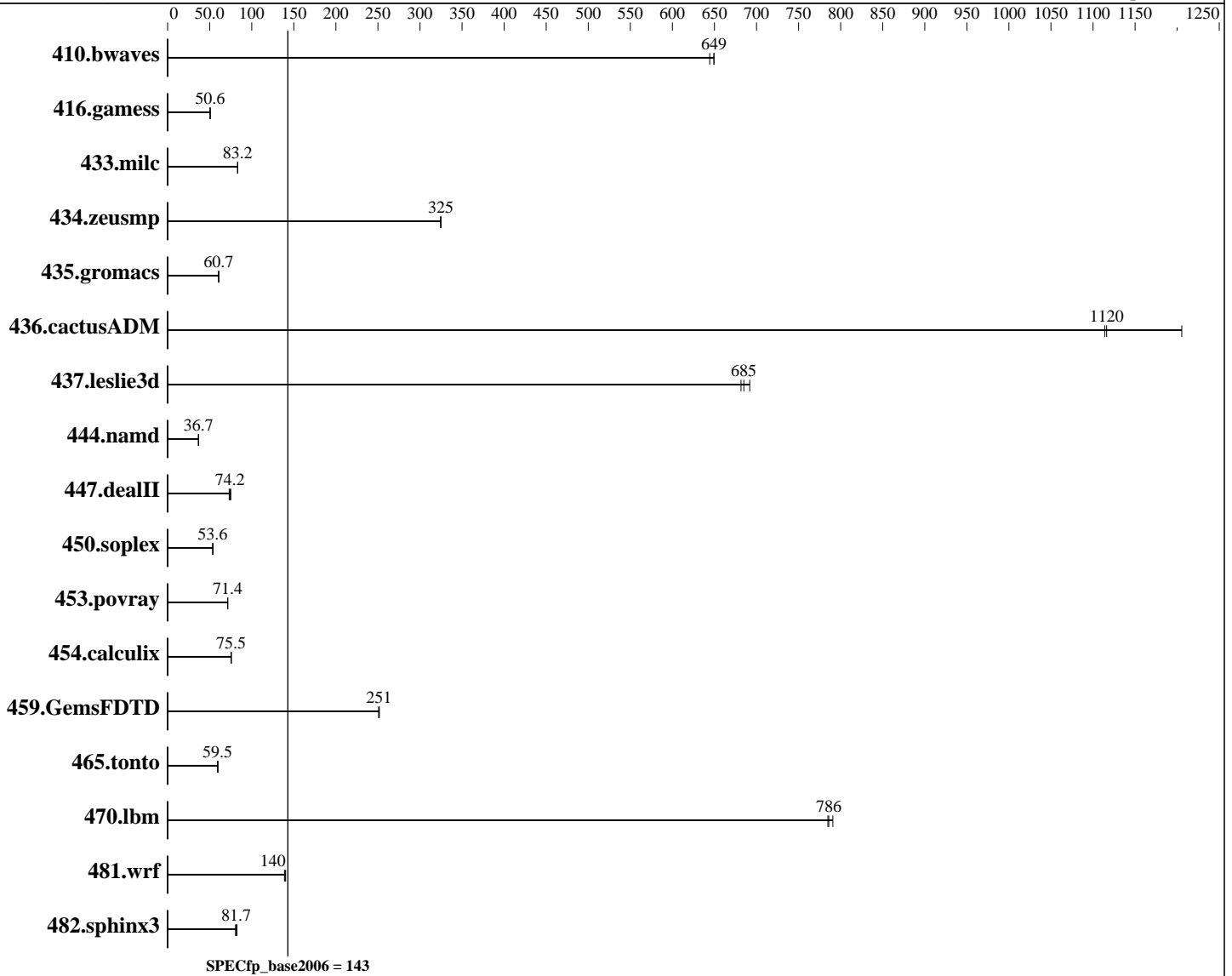
Test sponsor: HPE

Tested by: HPE

Test date: Sep-2017

Hardware Availability: Sep-2017

Software Availability: Apr-2017



Hardware

CPU Name: Intel Xeon Platinum 8180
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 112 cores, 4 chips, 28 cores/chip
 CPU(s) orderable: 2,4 chip(s)
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core

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Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)
 Kernel 3.10.0-514.el7.x86_64
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux
 Auto Parallel: Yes
 File System: xfs

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L3 Cache: 38.5 MB I+D on chip per chip
Other Cache: None
Memory: 768 GB (48 x 16 GB 2Rx8 PC4-2666V-R)
Disk Subsystem: 1 x 800 GB SATA SSD, RAID 0
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	21.1	644	20.9	649	<u>20.9</u>	<u>649</u>						
416.gamess	387	50.6	387	50.6	<u>387</u>	<u>50.6</u>						
433.milc	110	83.3	<u>110</u>	<u>83.2</u>	110	83.2						
434.zeusmp	28.0	325	<u>28.0</u>	<u>325</u>	28.0	325						
435.gromacs	118	60.8	118	60.7	<u>118</u>	<u>60.7</u>						
436.cactusADM	10.7	1110	9.91	1210	<u>10.7</u>	<u>1120</u>						
437.leslie3d	13.8	682	13.6	692	<u>13.7</u>	<u>685</u>						
444.namd	218	36.7	<u>219</u>	<u>36.7</u>	219	36.7						
447.dealII	152	75.1	156	73.2	<u>154</u>	<u>74.2</u>						
450.soplex	154	54.1	<u>156</u>	<u>53.6</u>	156	53.5						
453.povray	74.3	71.6	<u>74.5</u>	<u>71.4</u>	74.6	71.3						
454.calculix	<u>109</u>	<u>75.5</u>	109	75.8	109	75.5						
459.GemsFDTD	42.3	251	42.2	252	<u>42.2</u>	<u>251</u>						
465.tonto	166	59.4	<u>166</u>	<u>59.5</u>	164	59.9						
470.lbm	17.5	785	<u>17.5</u>	<u>786</u>	17.4	791						
481.wrf	<u>80.0</u>	<u>140</u>	79.6	140	80.4	139						
482.sphinx3	236	82.4	<u>239</u>	<u>81.7</u>	242	80.7						

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

Platform Notes

BIOS Configuration:
Hyper-Threading set to Disabled
Thermal Configuration set to Maximum Cooling
LLC prefetch set to Enabled
LLC Dead Line Allocation set to Disabled
Stale A to S set to Enabled
Memory patrol scrubbing set to disabled

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Platform Notes (Continued)

AHS PCI logging level set to Minimal logging
 Workload Profile set to General Peak Frequency Compute
 Energy/Performance Bias set to Maximum Performance
 Minimum Processor Idle Power Core C-state set to C1E
 Workload Profile set to Custom
 Uncore Frequency Scaling set to Auto
 Sysinfo program /home/cpu2006/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on DL580G10 Sat Sep 16 00:55:23 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) Platinum 8180 CPU @ 2.50GHz
 4 "physical id"s (chips)
 112 "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
  physical 2:   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 3:   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
cache size     : 39424 KB

```

From /proc/meminfo

```

MemTotal:      792278088 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

```

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Platform Notes (Continued)

```
uname -a:
Linux DL580G10 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 15 22:46
```

SPEC is set to: /home/cpu2006

```
Filesystem                Type      Size  Used Avail Use% Mounted on
/dev/mapper/rhel_dl580g10-home xfs      690G   13G  677G   2% /home
```

Additional information from dmidecode:

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 U34 08/18/2017

Memory:

48x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

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

KMP_AFFINITY = "granularity=core,compact"

LD_LIBRARY_PATH = "/home/cpu2006/lib/ia32:/home/cpu2006/lib/intel64:/home/cpu2006/sh10.2"

OMP_NUM_THREADS = "19"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64



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Base Portability Flags

```

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

```

Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html>

<http://www.spec.org/cpu2006/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/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml>

<http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-Intel-V1.2-SKX-revD.xml>



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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Oct 4 12:39:12 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 October 2017.