SPEC® CFP2006 Result

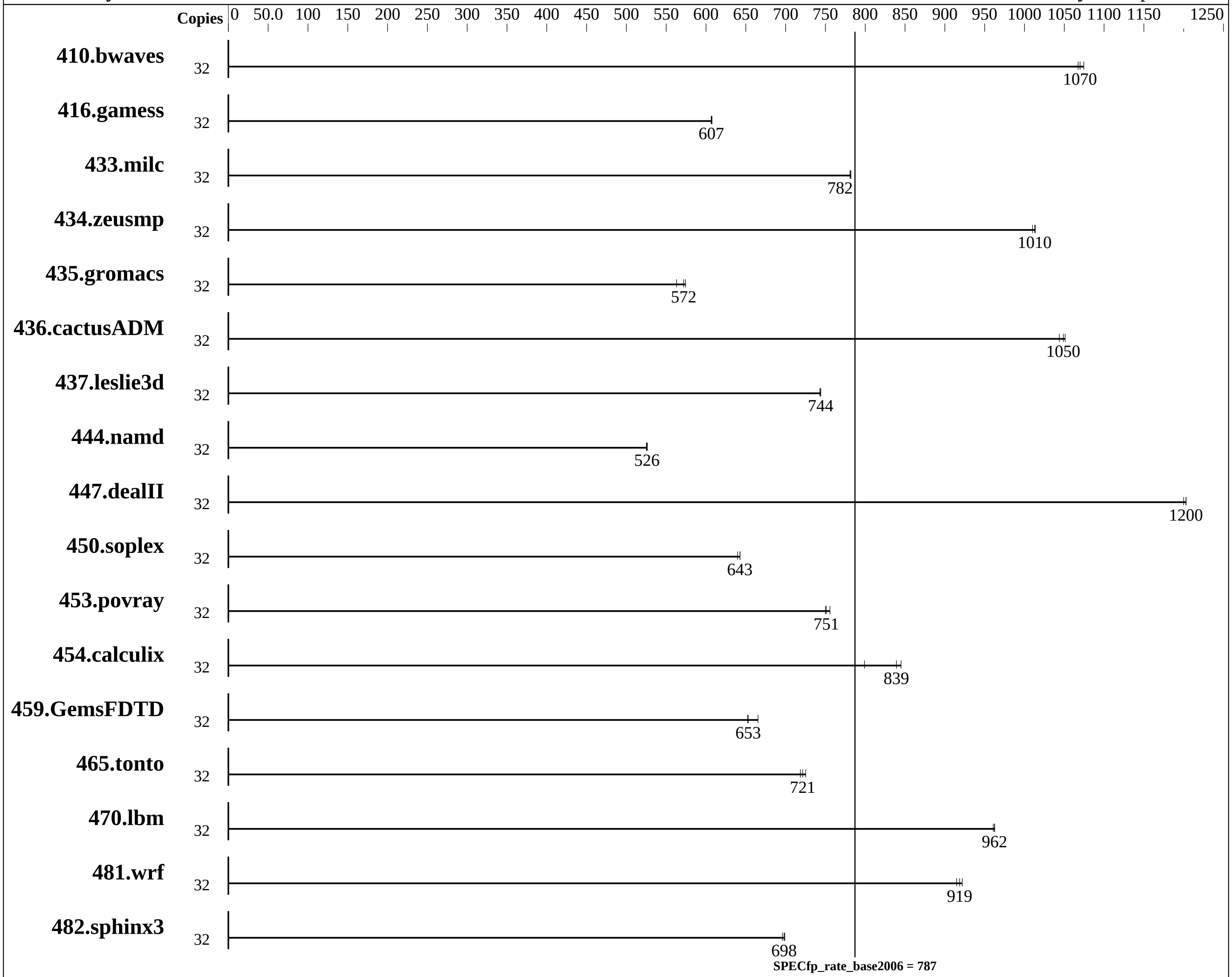
Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL385 Gen10
(2.10 GHz, AMD EPYC 7251)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 787

CPU2006 license: 3		**Test date:**	Dec-2017
Test sponsor:	HPE	**Hardware Availability:**	Nov-2017
Tested by:	HPE	**Software Availability:**	Sep-2017



Hardware

CPU Name:	AMD EPYC 7251
CPU Characteristics:	AMD Turbo CORE technology up to 2.90 GHz
CPU MHz:	2100
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	1, 2 chip(s)
Primary Cache:	64 KB I + 32 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 12 (x86_64) SP3 Kernel 4.4.73-5-default
Compiler:	C/C++/Fortran: Version 4.5.2.1 of x86 Open64 Compiler Suite (from AMD)
Auto Parallel:	No
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable

Continued on next page

Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL385 Gen10
(2.10 GHz, AMD EPYC 7251)

SPECfp_rate2006 = Not Run

SPECfp_rate_base2006 = 787

CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

Test date: Dec-2017
Hardware Availability: Nov-2017
Software Availability: Sep-2017

L3 Cache: 32 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (16 x 64 GB 4Rx4 PC4-2666V-L, running at 2400)
Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	**407**	**1070**	405	1070	407	1070							
416.gamess	32	1031	608	1033	607	**1033**	**607**							
433.milc	32	**376**	**782**	376	781	376	782							
434.zeusmp	32	288	1010	287	1010	**287**	**1010**							
435.gromacs	32	398	574	**399**	**572**	406	563							
436.cactusADM	32	364	1050	**365**	**1050**	366	1040							
437.leslie3d	32	404	744	405	743	**404**	**744**							
444.namd	32	488	526	489	525	**488**	**526**							
447.dealII	32	**304**	**1200**	304	1200	305	1200							
450.soplex	32	415	643	417	640	**415**	**643**							
453.povray	32	225	756	227	750	**227**	**751**							
454.calculix	32	330	799	312	845	**315**	**839**							
459.GemsFDTD	32	510	665	521	652	**520**	**653**							
465.tonto	32	434	725	438	719	**436**	**721**							
470.lbm	32	**457**	**962**	457	963	458	961							
481.wrf	32	**389**	**919**	388	922	391	915							
482.sphinx3	32	896	696	892	699	**893**	**698**							

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

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

```
Set vm/nr_hugepages=86016 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Platform Notes

```
BIOS Configuration:
 Performance Determinism set to Power Deterministic
 Memory Patrol Scrubbing set to Disabled
 Workload Profile set to General Throughput Compute
 Processor Power and Utilization Monitoring set to Disabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "896"
LD_LIBRARY_PATH = "/home/cpu2006/amd1603-rate-libs-revB/32:/home/cpu2006/amd1603-rate-libs-revB/64"

The binaries were built with the x86 Open64 Compiler Suite,
which is only available from (and supported by) AMD at
http://developer.amd.com/tools-and-sdks/cpu-development/x86-open64-compiler-suite/
```

Base Compiler Invocation

C benchmarks:
`opencc`

C++ benchmarks:
`openCC`

Fortran benchmarks:
`openf95`

Benchmarks using both Fortran and C:
`opencc openf95`

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
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
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
459.GemsFDTD: -DSPEC_CPU_LP64

Continued on next page

Base Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LINUX -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LP64 -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-Ofast -OPT:malloc_alg=1 -HP:bd=2m:heap=2m -IPA:plimit=8000 -IPA:small_pu=100 -mso -march=bdver1 -mno-fma4 -mno-xop -mno-tbm -WB, -Wl, -z,muldefs

C++ benchmarks:
-Ofast -static -CG:load_exe=0 -OPT:malloc_alg=1 -INLINE:aggressive=on -HP:bd=2m:heap=2m -D__OPEN64_FAST_SET -march=bdver2 -mno-fma4 -mno-xop -mno-tbm -WB, -Wl, -z,muldefs

Fortran benchmarks:
-Ofast -LNO:blocking=off -LNO:simd_peel_align=on -OPT:rsqrt=2 -OPT:unroll_size=256 -HP:bd=2m:heap=2m -mso -march=bdver1 -mno-fma4 -mno-xop -mno-tbm -WB, -Wl, -z,muldefs

Benchmarks using both Fortran and C:
-Ofast -OPT:malloc_alg=1 -HP:bd=2m:heap=2m -IPA:plimit=8000 -IPA:small_pu=100 -mso -march=bdver1 -mno-fma4 -mno-xop -mno-tbm -WB, -Wl, -z,muldefs -LNO:blocking=off -LNO:simd_peel_align=on -OPT:rsqrt=2 -OPT:unroll_size=256

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/x86-openflags-rate-revA-I.html
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revD.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/x86-openflags-rate-revA-I.xml
http://www.spec.org/cpu2006/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revD.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Mar 6 12:09:21 2018 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 January 2018.