SPEC® CFP2006 Result

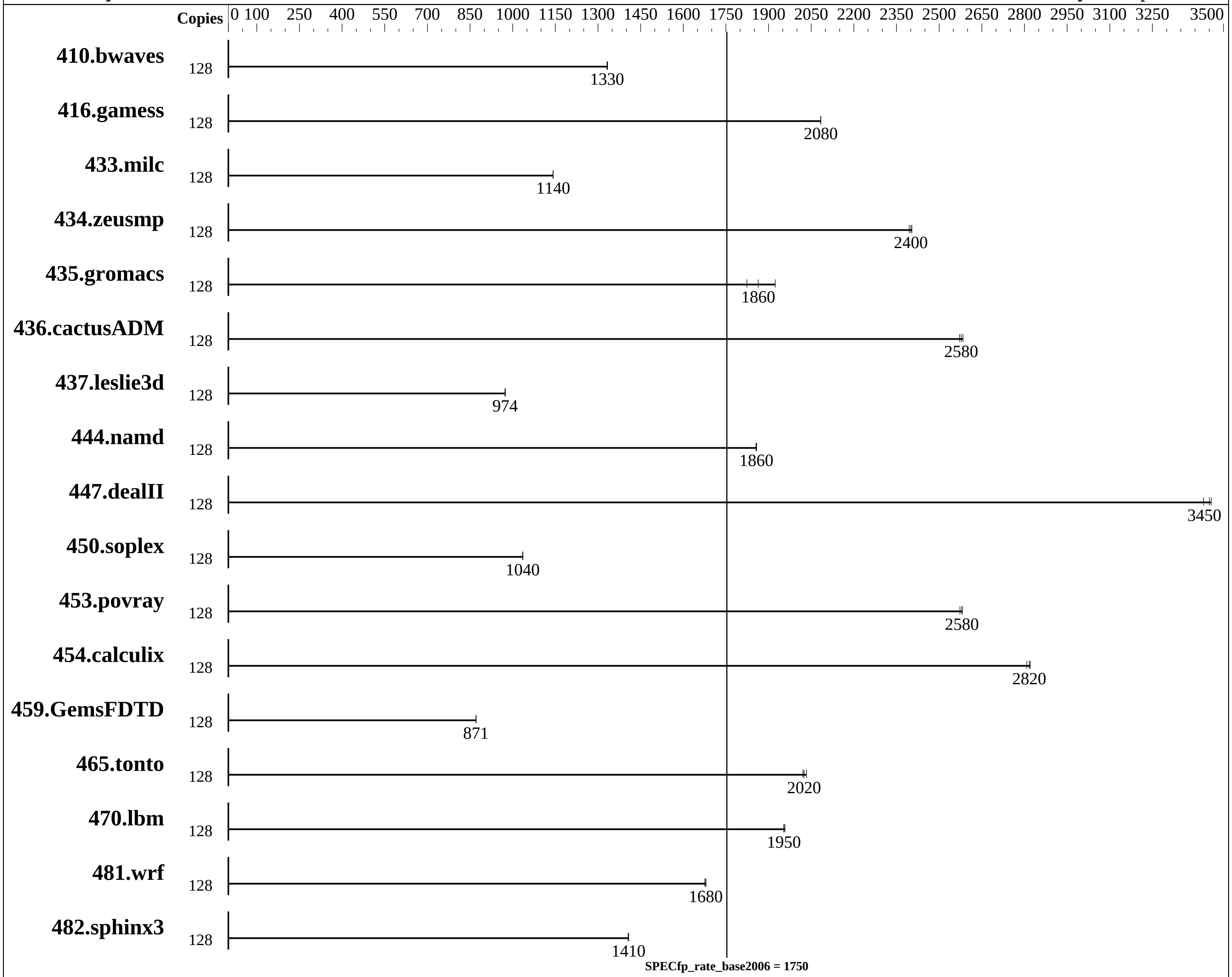
Hewlett Packard Enterprise
(Test Sponsor: HPE)

ProLiant DL385 Gen10
(2.00 GHz, AMD EPYC 7501)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 1750

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 7501
CPU Characteristics:	AMD Turbo CORE technology up to 3.00 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	64 cores, 2 chips, 32 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

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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

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L3 Cache:	64 MB I+D on chip per chip, 8 MB shared / 4 cores
Other Cache:	None
Memory:	1 TB (16 x 64 GB 4Rx4 PC4-2666V-L)
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	128	1304	1330	**1306**	**1330**	1306	1330							
416.gamess	128	1203	2080	**1203**	**2080**	1203	2080							
433.milc	128	1028	1140	1029	1140	**1029**	**1140**							
434.zeusmp	128	**485**	**2400**	486	2390	485	2400							
435.gromacs	128	475	1920	501	1820	**490**	**1860**							
436.cactusADM	128	**593**	**2580**	592	2580	595	2570							
437.leslie3d	128	1235	974	**1236**	**974**	1237	973							
444.namd	128	553	1860	553	1860	**553**	**1860**							
447.dealII	128	**424**	**3450**	427	3430	424	3460							
450.soplex	128	1031	1030	**1031**	**1040**	1030	1040							
453.povray	128	**264**	**2580**	265	2570	264	2580							
454.calculix	128	376	2810	374	2820	**375**	**2820**							
459.GemsFDTD	128	1558	871	1559	871	**1559**	**871**							
465.tonto	128	**622**	**2020**	623	2020	619	2030							
470.lbm	128	**900**	**1950**	900	1950	898	1960							
481.wrf	128	853	1680	**851**	**1680**	851	1680							
482.sphinx3	128	**1773**	**1410**	1774	1410	1772	1410							

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:
 Thermal Configuration set to Maximum Cooling
 Performance Determinism set to Power Deterministic
 Memory Patrol Scrubbing set to Disabled
 Workload Profile set to General Throughput Compute
 Minimum Processor Idle Power Core C-State set to C6 State
 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

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Base Portability Flags (Continued)

454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
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.

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