SPEC® CFP2006 Result

Hewlett-Packard Company

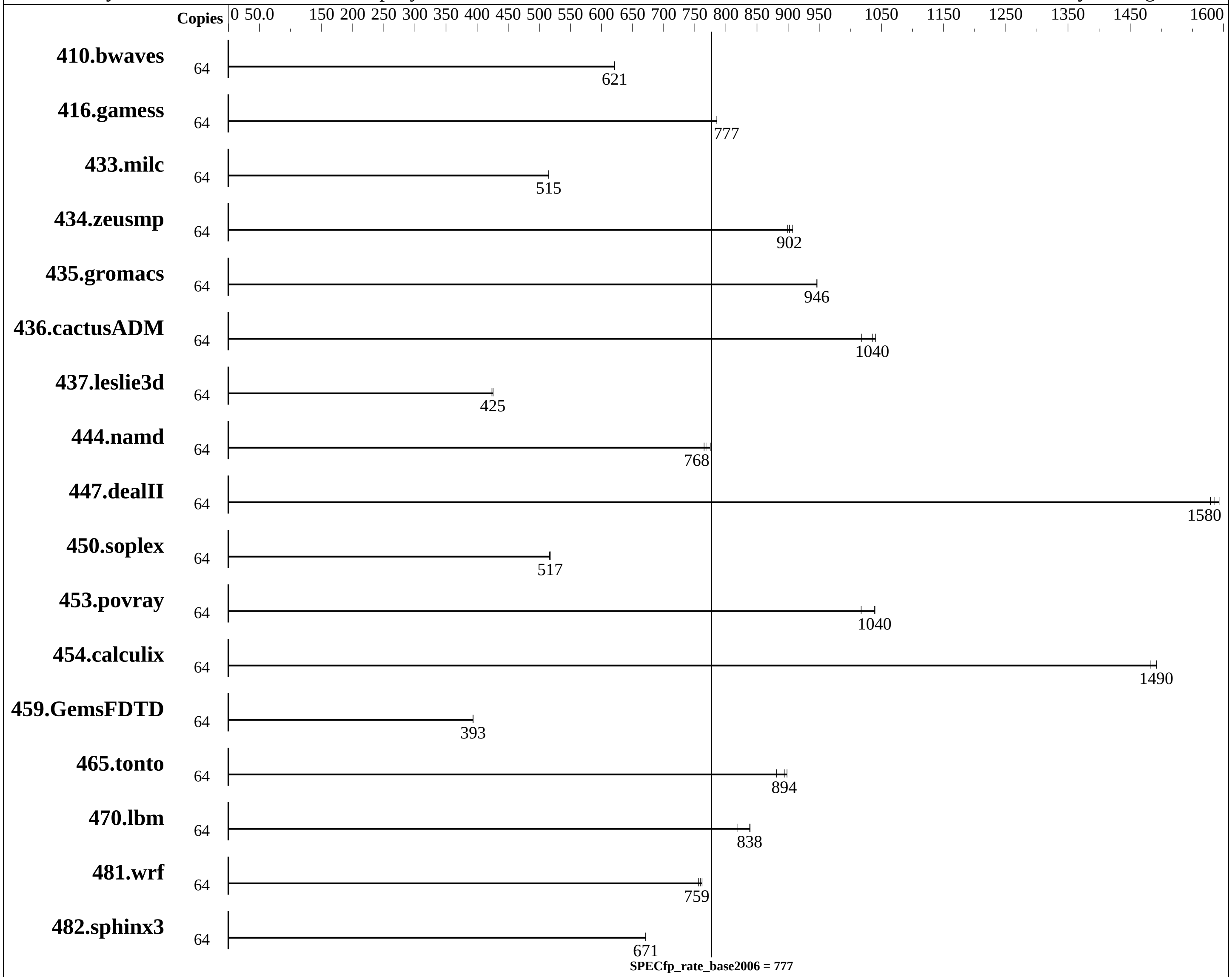
ProLiant DL585 G7
(2.80 GHz, AMD Opteron 6386 SE)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 777

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: May-2013
Hardware Availability: Dec-2012
Software Availability: Aug-2012



Hardware

CPU Name:	AMD Opteron 6386 SE
CPU Characteristics:	AMD Turbo CORE technology up to 3.50 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	64 cores, 4 chips, 16 cores/chip
CPU(s) orderable:	2,4 chips

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.3, Kernel 2.6.32-279.el6.x86_64
Compiler:	C/C++/Fortran: Version 4.5.2 of x86 Open64 Compiler Suite (from AMD)
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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Primary Cache: 512 KB I on chip per chip, 64 KB I shared / 2 cores; 16 KB D on chip per core
Secondary Cache: 16 MB I+D on chip per chip, 2 MB shared / 2 cores
L3 Cache: 16 MB I+D on chip per chip, 8 MB shared / 8 cores
Other Cache: None
Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 300 GB 10 K SAS, RAID 0
Other Hardware: None

Other Software: HP ProLiant Offline Array Configuration Utility 8.75.12.0 (22 Jun 2011)

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	64	**1401**	**621**	1401	621	1401	621							
416.gamess	64	**1612**	**777**	1595	785	1613	777							
433.milc	64	**1140**	**515**	1141	515	1140	515							
434.zeusmp	64	648	899	642	907	**646**	**902**							
435.gromacs	64	483	947	**483**	**946**	483	946							
436.cactusADM	64	751	1020	735	1040	**739**	**1040**							
437.leslie3d	64	1413	426	**1414**	**425**	1420	424							
444.namd	64	**668**	**768**	662	775	671	765							
447.dealII	64	460	1590	**462**	**1580**	464	1580							
450.soplex	64	1031	518	**1032**	**517**	1034	516							
453.povray	64	**328**	**1040**	327	1040	335	1020							
454.calculix	64	**354**	**1490**	356	1480	354	1490							
459.GemsFDTD	64	**1726**	**393**	1726	394	1727	393							
465.tonto	64	714	881	701	898	**705**	**894**							
470.lbm	64	1075	818	1048	839	**1049**	**838**							
481.wrf	64	**942**	**759**	939	762	946	756							
482.sphinx3	64	**1858**	**671**	1858	671	1859	671							

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

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152'  was used to set environment locked pages in memory limit

Set transparent_hugepage=never as a boot parameter in /boot/grub/menu.lst
```

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Operating System Notes (Continued)

```
Set vm/nr_hugepages=57344 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Platform Notes

```
 BIOS Configuration:
  HP Power Profile set to Maximum Performance
  Processor Power and Utilization Monitoring set to Disabled
  Minimum Processor Idle Power State set to Core C6 (CC6) State
  Thermal Configuration set to Increased Cooling
  Memory Refresh Rate set to 1x Refresh
```

General Notes

```
Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "896"
LD_LIBRARY_PATH = "/cpu2006/amd1206-rate-libs-revA/32:/cpu2006/amd1206-rate-libs-revA/64"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
http://developer.amd.com/cpu/open64

Binaries were compiled on a system with 2x AMD Opteron 6386SE chips + 128GB Memory using RHEL 6.3
```

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

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Base Portability Flags (Continued)

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
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

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=bdver1

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

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 -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-open64-452-flags-rate-revA-III.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-AMD-V1.2-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/x86-open64-452-flags-rate-revA-III.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-AMD-V1.2-revC.xml

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

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