



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®2006 = 17.2

ProLiant DL585 G5
(2.3 GHz AMD Opteron 8356)

SPECfp_base2006 = 15.1

CPU2006 license: 3

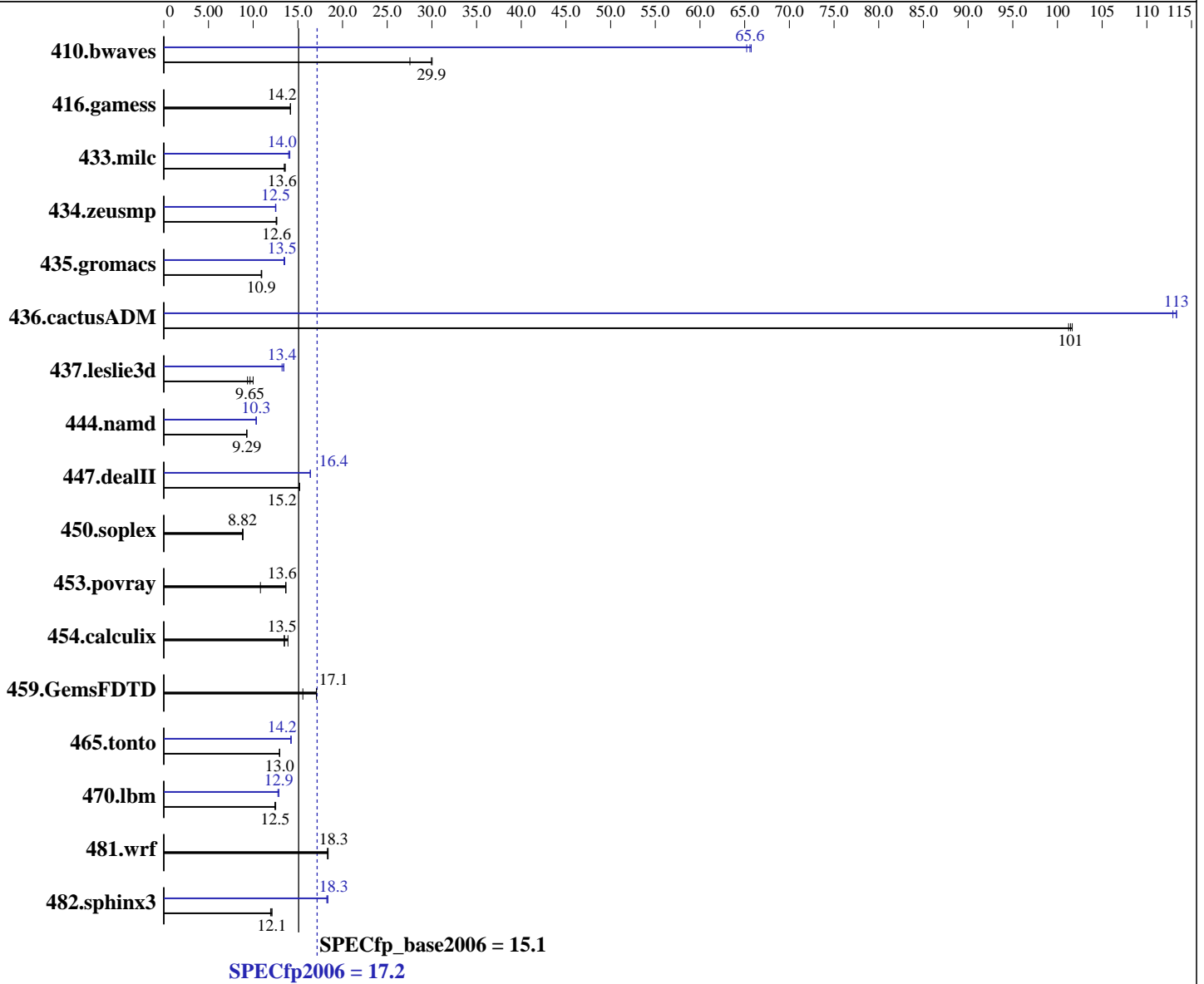
Test date: Mar-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2008

Tested by: Hewlett-Packard Company

Software Availability: May-2008



Hardware

CPU Name: AMD Opteron 8356
 CPU Characteristics:
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip
 CPU(s) orderable: 2,4 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: PGI Server Complete Version 7.2
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other Software: binutils-2.18.50

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L3 Cache: 2 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (16x4 GB, PC2-5300P CL5)
Disk Subsystem: 1x146 GB 10 K SAS
Other Hardware: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	454	29.9	453	30.0	493	27.5	208	65.2	207	65.7	207	65.6
416.gamess	1381	14.2	1383	14.2	1380	14.2	1381	14.2	1383	14.2	1380	14.2
433.milc	677	13.6	681	13.5	676	13.6	653	14.0	651	14.1	657	14.0
434.zeusmp	724	12.6	721	12.6	720	12.6	725	12.5	728	12.5	727	12.5
435.gromacs	654	10.9	651	11.0	654	10.9	531	13.4	531	13.5	527	13.5
436.cactusADM	118	101	118	101	118	102	105	113	105	113	106	113
437.leslie3d	974	9.65	1003	9.37	940	10.0	701	13.4	711	13.2	700	13.4
444.namd	863	9.29	865	9.28	863	9.29	776	10.3	776	10.3	774	10.4
447.dealII	752	15.2	754	15.2	753	15.2	697	16.4	698	16.4	698	16.4
450.soplex	940	8.87	948	8.80	945	8.82	940	8.87	948	8.80	945	8.82
453.povray	492	10.8	390	13.6	389	13.7	492	10.8	390	13.6	389	13.7
454.calculix	594	13.9	613	13.5	610	13.5	594	13.9	613	13.5	610	13.5
459.GemsFDTD	621	17.1	621	17.1	682	15.6	621	17.1	621	17.1	682	15.6
465.tonto	758	13.0	759	13.0	761	12.9	691	14.2	692	14.2	691	14.2
470.lbm	1097	12.5	1105	12.4	1102	12.5	1066	12.9	1068	12.9	1076	12.8
481.wrf	607	18.4	610	18.3	609	18.3	607	18.4	610	18.3	609	18.3
482.sphinx3	1631	11.9	1613	12.1	1610	12.1	1064	18.3	1061	18.4	1069	18.2

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

Operating System Notes

Environment stack size set to 'unlimited'
Max locked memory set to 2097152
PGI_HUGE_PAGES set to 896.
Total number of huge pages available is 14336.

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode



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Base Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

Fortran benchmarks:

pgf95

Benchmarks using both Fortran and C:

pgcc pgf95

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 -Mnomain
 436.cactusADM: -DSPEC_CPU_LP64 -Mnomain
 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 -Mnomain
 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:

-fast -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed -Mconcur
-Msmartalloc=huge:896 -tp barcelona-64 -Bstatic_pgi

C++ benchmarks:

-fast -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed
-Msmartalloc=huge:896 --zc_eh -tp barcelona-64 -Bstatic_pgi

Fortran benchmarks:

-fast -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed -Mconcur
-Msmartalloc=huge:896 -tp barcelona-64 -Bstatic_pgi

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

-fast -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed -Mconcur
-Msmartalloc=huge:896 -tp barcelona-64 -Bstatic_pgi

Base Other Flags

C benchmarks:

-w

C++ benchmarks:

-w

Fortran benchmarks:

-w

Benchmarks using both Fortran and C:

-w

Peak Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

Fortran benchmarks:

pgf95

Benchmarks using both Fortran and C:

pgcc pgf95

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -fastsse -Msmartalloc=huge:896 -Mconcur -Msafeptr
-Mfprelaxed -Mipa=jobs:8 -Mipa=inline -Mipa=arg
-Mipa=const -Mipa=ptr -Mipa=shape -tp barcelona-64

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Peak Optimization Flags (Continued)

433.milc (continued):

-Bstatic_pgi

470.lbm: -fastsse -Mfprelaxed -Msmartalloc=huge:896 -Mipa=fast

-Mipa=inline -Mipa=noarg -Mprefetch=distance:12

-Mprefetch=nta -tp barcelona-64 -Bstatic_pgi

482.sphinx3: -Mphi(pass 1) -Mipa=jobs:8(pass 2) -Mipa=fast(pass 2)

-Mipa=inline(pass 2) -Mpfo(pass 2) -fastsse -Mfprelaxed

-Msmartalloc -Mprefetch=distance:12 -Mprefetch=nta

-tp barcelona-64 -Bstatic_pgi

C++ benchmarks:

444.namd: -Mphi(pass 1) -Mipa=jobs:8(pass 2) -Mipa=fast(pass 2)

-Mipa=inline(pass 2) -Mconcur=noaltcode(pass 2)

-Mpfo(pass 2) -fast -Mfprelaxed -Msmartalloc=huge:896

--zc_eh -Mnodepchk -Munroll=n:4 -Munroll=m:8

-tp barcelona-64 -Bstatic_pgi

447.deallI: -fast -Mfprelaxed -Msmartalloc=huge:896 --zc_eh -Mnovect

-alias=ansi -Mipa=jobs:8 -Mipa=fast -Mipa=inline

-tp barcelona-64 -Bstatic_pgi

450.soplex: basepeak = yes

453.povray: basepeak = yes

Fortran benchmarks:

410.bwaves: -fastsse -Mloop32 -Mfprelaxed -Msmartalloc

-Mprefetch=distance:12 -Mprefetch=nta -Mconcur -Mipa=jobs:8

-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi

416.gamess: basepeak = yes

434.zeusmp: -fast -Mloop32 -Mipa=jobs:8 -Mipa=fast -Mipa=inline

-Mfprelaxed -Mconcur -Msmartalloc -tp barcelona-64

-Bstatic_pgi

437.leslie3d: -fast -Mipa=jobs:8 -Mipa=fast -Mipa=inline -Mfprelaxed

-Mconcur=noaltcode -Msmartalloc=huge:896 -tp barcelona-64

-Bstatic_pgi

459.GemsFDTD: basepeak = yes

465.tonto: -fast -O4 -Mfprelaxed -Msmartalloc=huge:896

-Mprefetch=distance:8 -Mipa=jobs:8 -Mipa=fast -Mipa=inline

-Mvect=noaltcode -tp barcelona-64 -Bstatic_pgi

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -fast -Mconcur -Mfpapprox=rsqrt -Mipa=jobs:8 -Mipa=fast
-Mipa=inline -Mfprelaxed -Msmartalloc=huge:896
-tp barcelona-64 -Bstatic_pgi

436.cactusADM: -fastsse -Mfprelaxed -Mconcur -Msmartalloc -Mdse
-Mipa=jobs:8 -Mipa=fast -Mipa=inline -tp barcelona-64
-Bstatic_pgi

454.calculix: basepeak = yes

481.wrf: basepeak = yes

Peak Other Flags

C benchmarks:

-w

C++ benchmarks:

-w

Fortran benchmarks:

-w

Benchmarks using both Fortran and C:

-w

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.xml>

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

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 18:37:59 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 April 2008.