



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®2006 = 18.0

ProLiant DL185 G5
(2.3 GHz AMD Opteron 2356)

SPECfp_base2006 = 16.6

CPU2006 license: 3

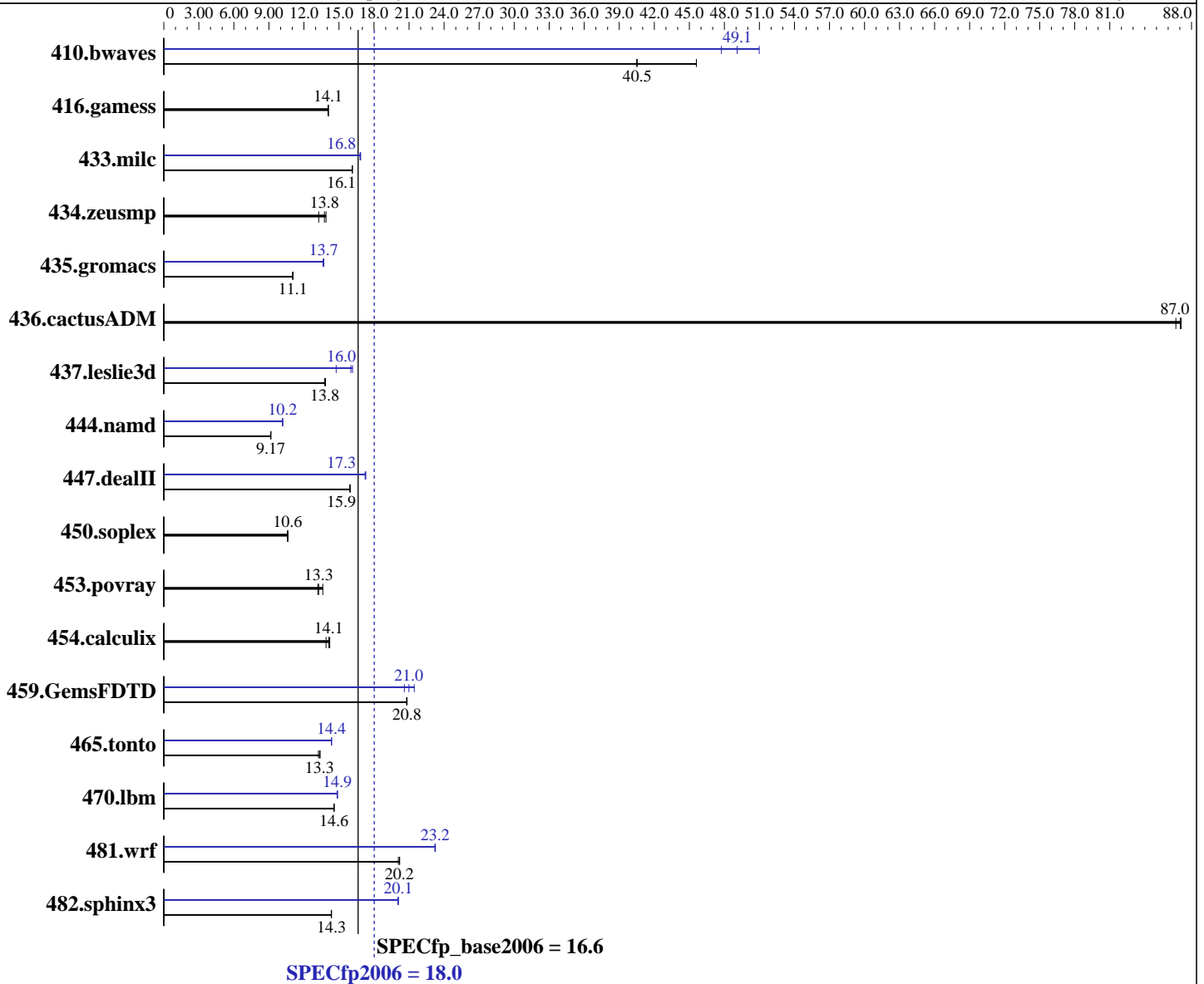
Test date: Mar-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2008

Tested by: Hewlett-Packard Company

Software Availability: May-2008



Hardware

CPU Name: AMD Opteron 2356
 CPU Characteristics:
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 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: 32 GB (8x4 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	298	45.6	336	40.5	335	40.5	267	51.0	285	47.7	277	49.1
416.gamess	1389	14.1	1391	14.1	1391	14.1	1389	14.1	1391	14.1	1391	14.1
433.milc	569	16.1	569	16.1	568	16.2	546	16.8	545	16.8	544	16.9
434.zeusmp	686	13.3	655	13.9	662	13.8	686	13.3	655	13.9	662	13.8
435.gromacs	645	11.1	648	11.0	645	11.1	521	13.7	524	13.6	521	13.7
436.cactusADM	138	86.7	137	87.1	137	87.0	138	86.7	137	87.1	137	87.0
437.leslie3d	682	13.8	681	13.8	679	13.8	637	14.8	587	16.0	582	16.2
444.namd	877	9.15	875	9.17	875	9.17	788	10.2	789	10.2	788	10.2
447.dealII	718	15.9	717	15.9	717	15.9	663	17.2	662	17.3	662	17.3
450.soplex	786	10.6	787	10.6	785	10.6	786	10.6	787	10.6	785	10.6
453.povray	401	13.3	403	13.2	391	13.6	401	13.3	403	13.2	391	13.6
454.calculix	581	14.2	594	13.9	584	14.1	581	14.2	594	13.9	584	14.1
459.GemsFDTD	510	20.8	509	20.8	510	20.8	495	21.5	515	20.6	505	21.0
465.tonto	735	13.4	737	13.3	743	13.2	685	14.4	685	14.4	686	14.3
470.lbm	942	14.6	943	14.6	943	14.6	924	14.9	926	14.8	924	14.9
481.wrf	556	20.1	553	20.2	553	20.2	481	23.2	481	23.2	480	23.3
482.sphinx3	1357	14.4	1359	14.3	1359	14.3	971	20.1	972	20.0	970	20.1

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 7168.
NCPUS set to number of cores
numactl used to bind processes to CPUs

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 -Msafepr
-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: -Mpfi(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: -Mpfi(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: basepeak = yes

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

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

-Bstatic_pgi

459.GemsFDTD: -Mpfi(pass 1) -Mipa=jobs:8(pass 2) -Mipa=fast(pass 2)

-Mipa=inlinenopfo(pass 2) -Mconcur(pass 2) -Mpfo(pass 2)

-fast -Mfprelaxed -Msmartalloc=huge:896 -Mprefetch=nta

-tp barcelona-64 -Bstatic_pgi

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: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -fast -Mfprelaxed -Msmartalloc=huge:896 -Mconcur=noaltcode
-Mvect=noaltcode -Mprefetch=distance:8 -tp barcelona-64
-Bstatic_pgi

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.

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