SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp®2006 = 19.7

ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)
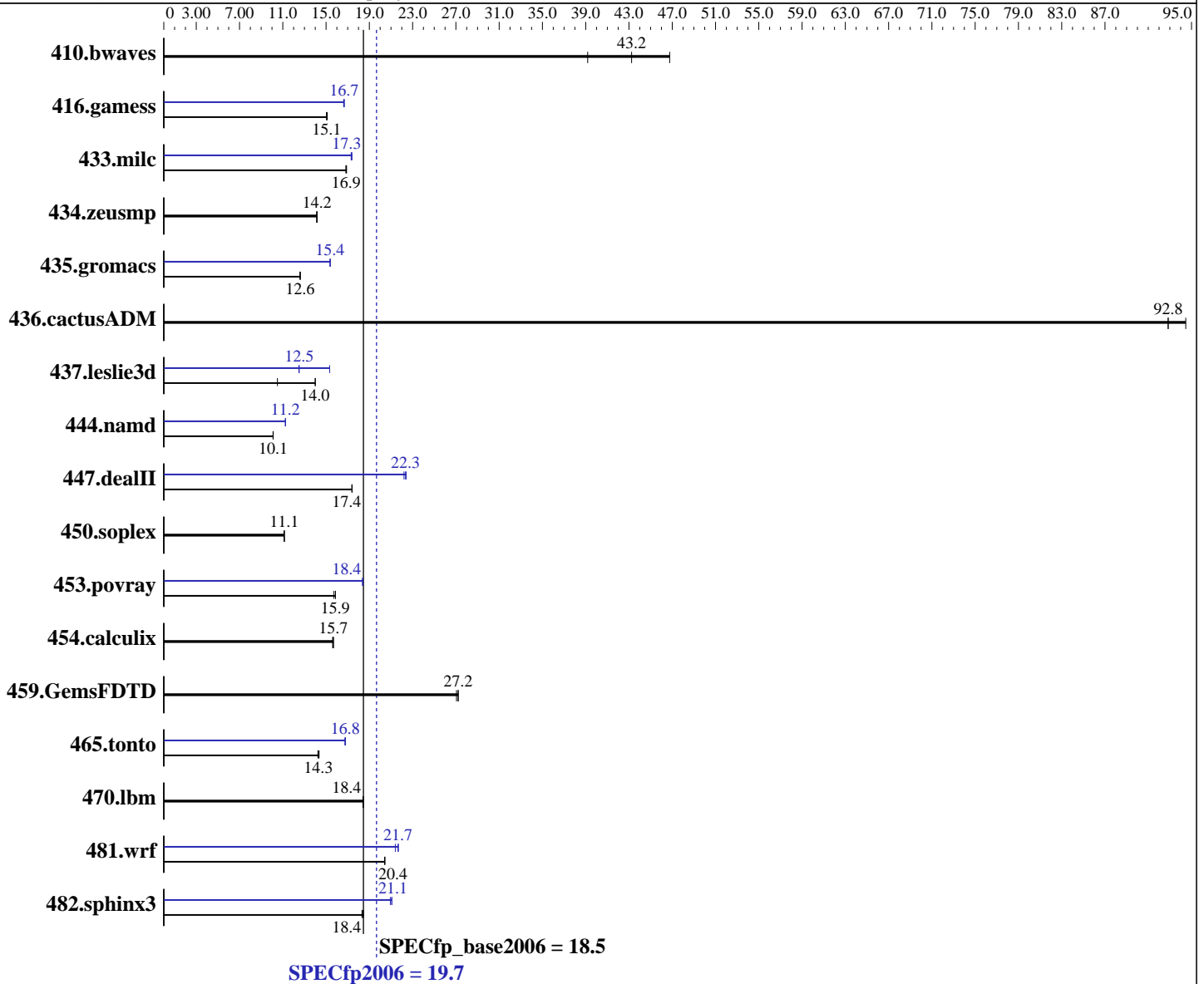
SPECfp_base2006 = 18.5

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

Test date: Jul-2008
Hardware Availability: Jul-2008
Software Availability: Jun-2008

410.bwaves 43.2
416.gamess 16.7 / 15.1
433.milc 17.3 / 16.9
434.zeusmp 14.2
435.gromacs 15.4 / 12.6
436.cactusADM 92.8
437.leslie3d 12.5 / 14.0
444.namd 11.2 / 10.1
447.dealII 22.3 / 17.4
450.soplex 11.1
453.povray 18.4 / 15.9
454.calculix 15.7
459.GemsFDTD 27.2
465.tonto 16.8 / 14.3
470.lbm 18.4
481.wrf 21.7 / 20.4
482.sphinx3 21.1 / 18.4

SPECfp_base2006 = 18.5
SPECfp2006 = 19.7

Hardware

CPU Name: AMD Opteron 8360 SE
CPU Characteristics:
CPU MHz: 2500
FPU: Integrated
CPU(s) enabled: 8 cores, 2 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

Continued on next page

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
PathScale Compiler Suite Release 3.2
Auto Parallel: Yes
File System: ext2
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

SPECfp2006 =	19.7
SPECfp_base2006 =	18.5

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

Test date: Jul-2008
Hardware Availability: Jul-2008
Software Availability: Jun-2008

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 15 K SAS
Other Hardware:	None

Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	347	39.2	**314**	**43.2**	291	46.8	347	39.2	**314**	**43.2**	291	46.8
416.gamess	1301	15.0	1296	15.1	**1301**	**15.1**	**1174**	**16.7**	1174	16.7	1178	16.6
433.milc	543	16.9	**545**	**16.9**	545	16.8	528	17.4	530	17.3	**529**	**17.3**
434.zeusmp	642	14.2	644	14.1	**642**	**14.2**	642	14.2	644	14.1	**642**	**14.2**
435.gromacs	**567**	**12.6**	566	12.6	567	12.6	464	15.4	464	15.4	**464**	**15.4**
436.cactusADM	**129**	**92.8**	129	92.8	126	94.5	**129**	**92.8**	129	92.8	126	94.5
437.leslie3d	895	10.5	**672**	**14.0**	671	14.0	753	12.5	613	15.3	**751**	**12.5**
444.namd	794	10.1	**793**	**10.1**	793	10.1	713	11.2	**713**	**11.2**	713	11.3
447.dealII	657	17.4	**657**	**17.4**	658	17.4	511	22.4	**512**	**22.3**	515	22.2
450.soplex	750	11.1	749	11.1	**749**	**11.1**	750	11.1	749	11.1	**749**	**11.1**
453.povray	**335**	**15.9**	335	15.9	338	15.7	290	18.4	**289**	**18.4**	289	18.4
454.calculix	**526**	**15.7**	529	15.6	526	15.7	**526**	**15.7**	529	15.6	526	15.7
459.GemsFDTD	392	27.1	**390**	**27.2**	390	27.2	392	27.1	**390**	**27.2**	390	27.2
465.tonto	686	14.4	**688**	**14.3**	691	14.2	**586**	**16.8**	586	16.8	588	16.7
470.lbm	745	18.4	747	18.4	**746**	**18.4**	745	18.4	747	18.4	**746**	**18.4**
481.wrf	547	20.4	547	20.4	**547**	**20.4**	515	21.7	522	21.4	**516**	**21.7**
482.sphinx3	1064	18.3	1056	18.5	**1061**	**18.4**	**925**	**21.1**	931	20.9	925	21.1

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
```

Platform Notes

```
BIOS configuration:
  Power Regulator set to Static High Performance Mode
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

$SPECfp2006 =$ 19.7

$SPECfp\_base2006 =$ 18.5

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

Test date: Jul-2008
Hardware Availability: Jul-2008
Software Availability: Jun-2008

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:
```
    -fastsse -Msmartalloc=huge:896 -Mfprelaxed -Mconcur -Mipa=jobs:4
    -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

C++ benchmarks:
```
    -fastsse -Msmartalloc=huge:896 -Mfprelaxed --zc_eh -Mipa=jobs:4
    -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

Fortran benchmarks:
```
    -fastsse -Mfprelaxed -Msmartalloc=huge:896 -Mconcur -Mipa=jobs:4
    -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

$SPECfp2006 =$ 19.7

$SPECfp\_base2006 =$ 18.5

CPU2006 license: 3	**Test date:** Jul-2008
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Jul-2008
Tested by: Hewlett-Packard Company	**Software Availability:** Jun-2008

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-fastsse -Msmartalloc=huge:896 -Mfprelaxed -Mconcur -Mipa=jobs:4
-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

Peak Compiler Invocation

C benchmarks:
```
pgcc
```

C++ benchmarks (except as noted below):
```
pathCC
```

    444.namd: `pgcpp`

    450.soplex: `pgcpp`

Fortran benchmarks (except as noted below):
```
pgf95
```

    416.gamess: `pathf95`

    465.tonto: `pathf95`

Benchmarks using both Fortran and C:
```
pgcc pgf95
```

Peak 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
     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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 =   19.7

ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

SPECfp_base2006 =   18.5

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

Test date: Jul-2008
Hardware Availability: Jul-2008
Software Availability: Jun-2008

Peak Optimization Flags

C benchmarks:

    433.milc: -fastsse -Msmartalloc=huge:896 -Mconcur -Msafeptr
              -Mfprelaxed -Mipa=jobs:4 -Mipa=inline -Mipa=arg
              -Mipa=const -Mipa=ptr -Mipa=shape -tp barcelona-64
              -Bstatic_pgi

    470.lbm: basepeak = yes

    482.sphinx3: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2)
                 -Mipa=jobs:4(pass 2) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
                 -fastsse -Mfprelaxed -Msmartalloc -tp barcelona-64
                 -Bstatic_pgi

C++ benchmarks:

    444.namd: -Mpfi(pass 1) -Mipa=jobs:4(pass 2) -Mipa=fast(pass 2)
              -Mipa=inline(pass 2) -Mpfo(pass 2) -fastsse -Munroll=n:4
              -Munroll=m:8 -Msmartalloc=huge:896 -Mnodepchk
              -Mconcur=noaltcode -Mfprelaxed --zc_eh -tp barcelona-64
              -Bstatic_pgi

    447.dealII: -march=barcelona -Ofast -static -INLINE:aggressive=on
                -fno-exceptions -m32

    450.soplex: basepeak = yes

    453.povray: -march=barcelona -fb_create fbdata(pass 1)
                -fb_opt fbdata(pass 2) -Ofast

Fortran benchmarks:

    410.bwaves: basepeak = yes

    416.gamess: -march=barcelona -fb_create fbdata(pass 1)
                -fb_opt fbdata(pass 2) -O2 -OPT:Ofast -OPT:ro=3
                -OPT:unroll_size=256

    434.zeusmp: basepeak = yes

    437.leslie3d: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2)
                  -Mipa=jobs:4(pass 2) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
                  -fastsse -Mvect=fuse -Msmartalloc=huge:896
                  -Mconcur=noaltcode -Mprefetch=distance:8 -Mprefetch=t0
                  -Mfprelaxed -tp barcelona-64 -Bstatic_pgi

    459.GemsFDTD: basepeak = yes

    465.tonto: -march=barcelona -Ofast -OPT:alias=no_f90_pointer_alias
               -LNO:blocking=off -CG:load_exe=1 -IPA:plimit=525

Continued on next page

Hewlett-Packard Company

ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

$SPECfp2006 =$ 19.7

$SPECfp\_base2006 =$ 18.5

CPU2006 license: 3		**Test date:**	Jul-2008
Test sponsor:	Hewlett-Packard Company	**Hardware Availability:**	Jul-2008
Tested by:	Hewlett-Packard Company	**Software Availability:**	Jun-2008

Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
435.gromacs: -fastsse -Msmartalloc=huge:896 -Mconcur -Mfprelaxed
             -Mfpapprox=rsqrt -Mipa=jobs:4 -Mipa=fast -Mipa=inline
             -tp barcelona-64 -Bstatic_pgi

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -fastsse -Mvect=noaltcode -Msmartalloc
         -Mprefetch=distance:8 -Mconcur=noaltcode -Mfprelaxed
         -tp barcelona-64 -Bstatic_pgi
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.20090713.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.20090713.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 18:55:02 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 August 2008.