SPEC® CFP2006 Result
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Hewlett-Packard Company

ProLiant DL385 G2
(3.0 GHz AMD Opteron 2222)

$SPECfp^{®}2006 =$ 14.9

$SPECfp\_base2006 =$ 14.6

CPU2006 license: 3	**Test date:** Aug-2007
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Sep-2007
Tested by: Hewlett-Packard Company	**Software Availability:** Oct-2007

SPECfp_base2006 = 14.6
SPECfp2006 = 14.9

Hardware

CPU Name:	AMD Opteron 2222
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB 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-default
Compiler:	The Portland Group (PGI) PGI pgf90 7.1-0 Fortran Compiler PGI pgcc 7.1-0 C Compiler PGI pgCC 7.1-0 C++ Compiler
Auto Parallel:	No
File System:	ext2
System State:	Multi-user, run level 3

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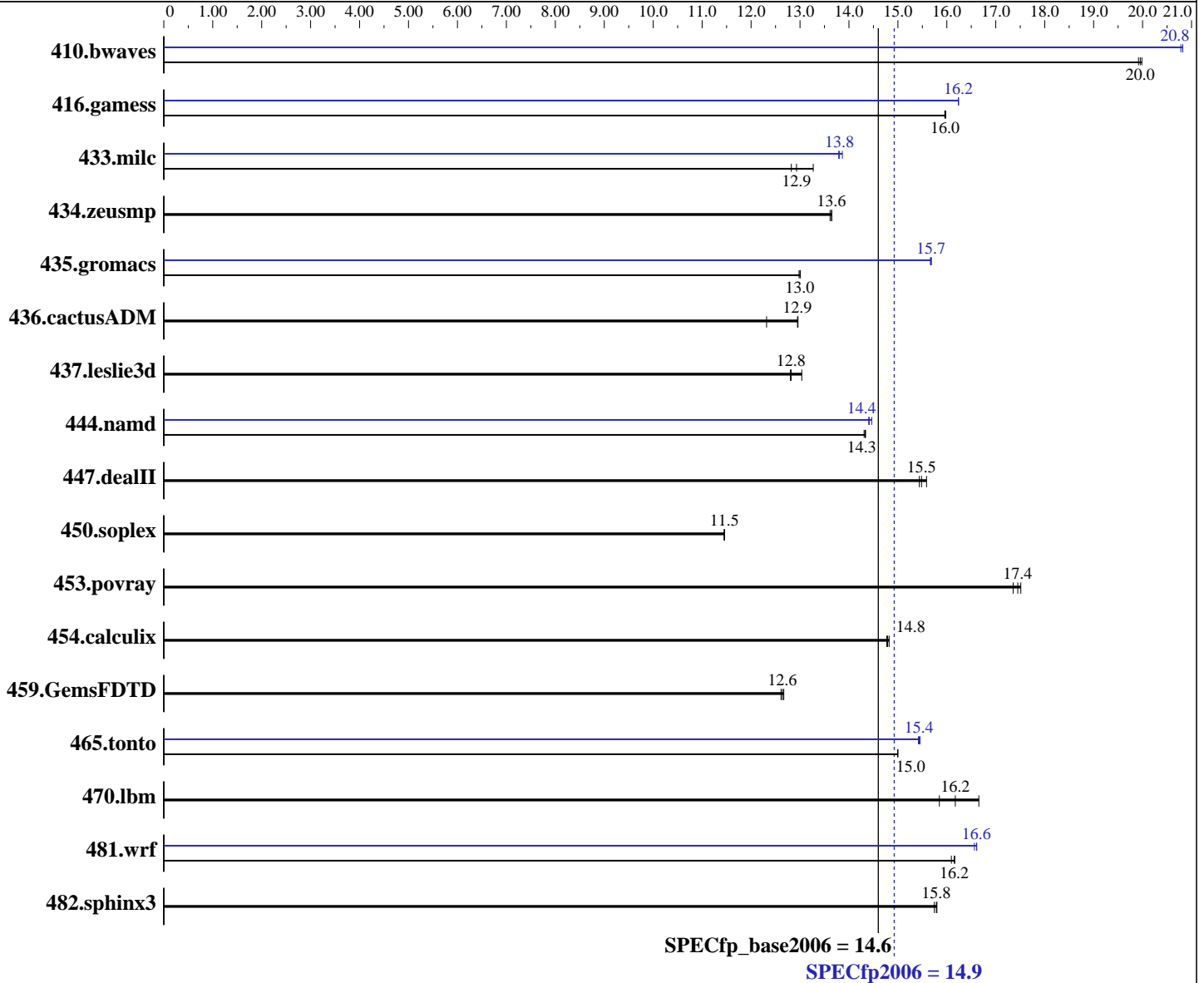| SPECfp2006 =	14.9
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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (4x4 GB, PC2-5300P CL5)
Disk Subsystem:	1x72 GB 10 K SAS
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	64-bit
Other Software:	none

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	680	20.0	**681**	**20.0**	682	19.9	**653**	**20.8**	653	20.8	654	20.8
416.gamess	1227	16.0	**1226**	**16.0**	1225	16.0	1206	16.2	1206	16.2	**1206**	**16.2**
433.milc	716	12.8	**710**	**12.9**	692	13.3	666	13.8	**665**	**13.8**	662	13.9
434.zeusmp	668	13.6	667	13.6	**667**	**13.6**	668	13.6	667	13.6	**667**	**13.6**
435.gromacs	550	13.0	**549**	**13.0**	549	13.0	**455**	**15.7**	455	15.7	456	15.7
436.cactusADM	922	13.0	**923**	**12.9**	970	12.3	922	13.0	**923**	**12.9**	970	12.3
437.leslie3d	721	13.0	734	12.8	**733**	**12.8**	721	13.0	734	12.8	**733**	**12.8**
444.namd	**560**	**14.3**	559	14.3	560	14.3	557	14.4	**556**	**14.4**	554	14.5
447.dealII	**739**	**15.5**	741	15.4	734	15.6	**739**	**15.5**	741	15.4	734	15.6
450.soplex	**728**	**11.5**	728	11.5	729	11.4	**728**	**11.5**	728	11.5	729	11.4
453.povray	**305**	**17.4**	307	17.4	304	17.5	**305**	**17.4**	307	17.4	304	17.5
454.calculix	**558**	**14.8**	557	14.8	558	14.8	**558**	**14.8**	557	14.8	558	14.8
459.GemsFDTD	837	12.7	**839**	**12.6**	841	12.6	837	12.7	**839**	**12.6**	841	12.6
465.tonto	656	15.0	656	15.0	**656**	**15.0**	638	15.4	**638**	**15.4**	637	15.5
470.lbm	825	16.7	**850**	**16.2**	867	15.8	825	16.7	**850**	**16.2**	867	15.8
481.wrf	694	16.1	691	16.2	**692**	**16.2**	672	16.6	**673**	**16.6**	674	16.6
482.sphinx3	1238	15.7	1234	15.8	**1235**	**15.8**	1238	15.7	1234	15.8	**1235**	**15.8**

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'
ulimit -l set to 1048576
Set vm/nr_hugepages=1024 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Single-processor kernel used
```

Base Compiler Invocation

C benchmarks:
```
pgcc
```

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Base Compiler Invocation (Continued)

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=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi
```

C++ benchmarks:
```
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
--zc_eh -tp k8-64 -Bstatic_pgi
```

Fortran benchmarks:
```
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi
```

Benchmarks using both Fortran and C:
```
-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8
-tp k8-64 -Bstatic_pgi
```

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Test date: Aug-2007
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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: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
          -Mipa=noarg(pass 2) -Mpfo(pass 2) -fast -O4 -Mdse
          -Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi
```

```
470.lbm: basepeak = yes
```

```
482.sphinx3: basepeak = yes
```

C++ benchmarks:

Continued on next page

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Peak Optimization Flags (Continued)

```
444.namd: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)
          -Mipa=inline(pass 2) -fast -O4 -Mfprelaxed
          -Msmartalloc=huge:32 --zc_eh -tp k8-64 -Bstatic_pgi
```

447.dealII: `basepeak = yes`

450.soplex: `basepeak = yes`

453.povray: `basepeak = yes`

Fortran benchmarks:

```
410.bwaves: -fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc
            -tp k8-64 -Bstatic_pgi
```

```
416.gamess: -fast -Mipa=fast -Mipa=inline -Mfprelaxed -Mvect=noaltcode
            -Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi
```

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `basepeak = yes`

```
465.tonto: -fast -Mfprelaxed -Msmartalloc=huge:128 -Mipa=fast
           -Mipa=inline -Mvect=noaltcode -tp k8-64 -Bstatic_pgi
```

Benchmarks using both Fortran and C:

```
435.gromacs: -fast -O4 -Mipa=fast -Mipa=inline -Mfprelaxed
             -Msmartalloc=huge:16 -tp k8-64 -Mfpapprox=rsqrt
             -Bstatic_pgi
```

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

```
481.wrf: -fast -Mfprelaxed -Msmartalloc=huge:32 -Mvect=noaltcode
         -tp k8-64 -Bstatic_pgi
```

Peak Other Flags

C benchmarks:
```
-w
```

C++ benchmarks:
```
-w
```

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Peak Other Flags (Continued)

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-pgi710_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-pgi710_flags.xml

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