SPEC® CFP2006 Result
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Hewlett-Packard Company

ProLiant BL460c
(1.86 GHz, Intel Xeon processor E5320)

$SPECfp®\_rate2006 =$ 43.7

$SPECfp\_rate\_base2006 =$ 43.0

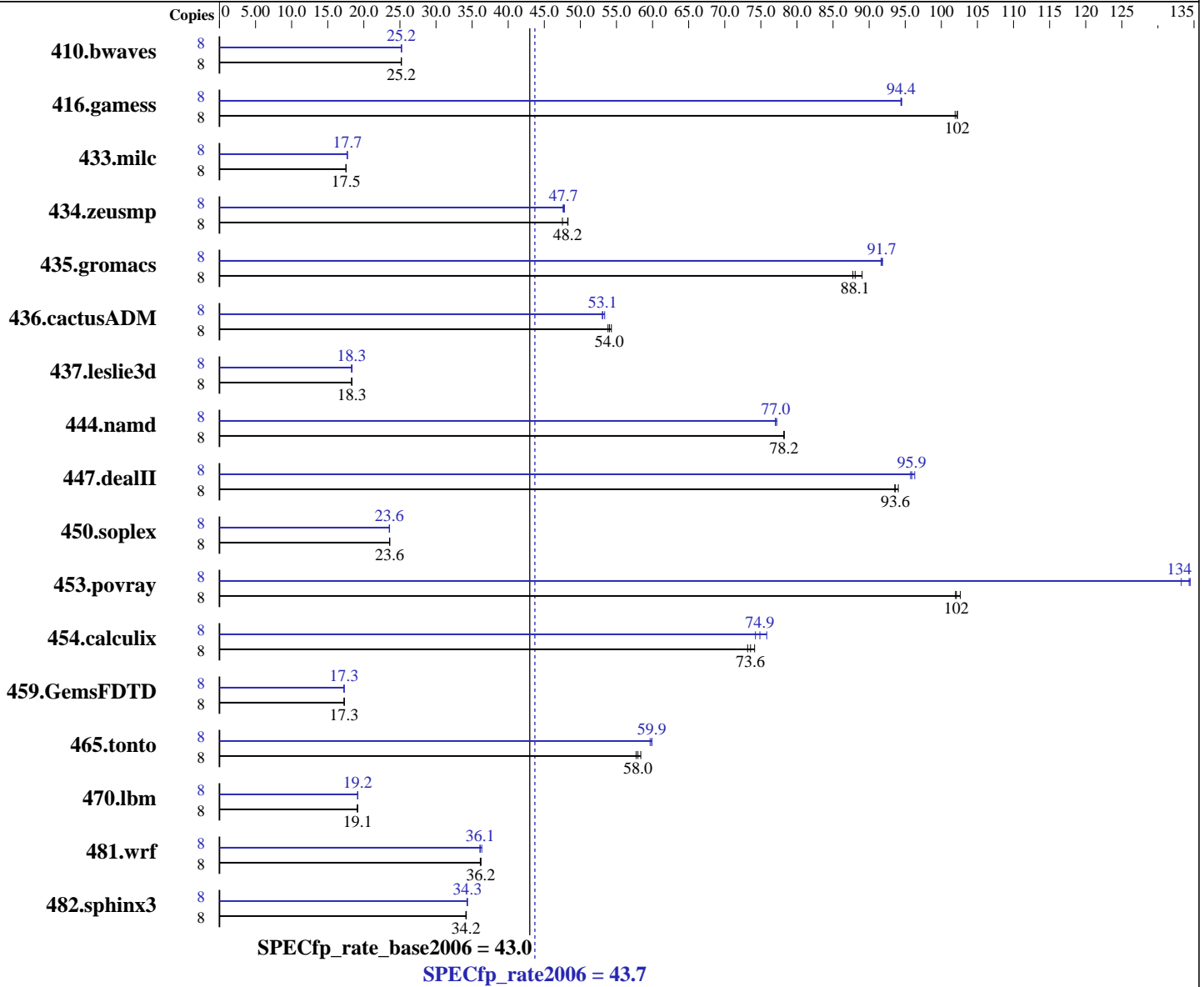|	
CPU2006 license: 3	**Test date:** Feb-2007
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Jan-2007
Tested by: Hewlett-Packard Company	**Software Availability:** Nov-2006

Copies

Benchmark	value (blue)	value (black)
410.bwaves	25.2	25.2
416.gamess	94.4	102
433.milc	17.7	17.5
434.zeusmp	47.7	48.2
435.gromacs	91.7	88.1
436.cactusADM	53.1	54.0
437.leslie3d	18.3	18.3
444.namd	77.0	78.2
447.dealII	95.9	93.6
450.soplex	23.6	23.6
453.povray	134	102
454.calculix	74.9	73.6
459.GemsFDTD	17.3	17.3
465.tonto	59.9	58.0
470.lbm	19.2	19.1
481.wrf	36.1	36.2
482.sphinx3	34.3	34.2

SPECfp_rate_base2006 = 43.0

SPECfp_rate2006 = 43.7

Hardware

CPU Name:	Intel Xeon E5320
CPU Characteristics:	1.86 GHz, 2x4 MB L2 shared, 1066MHz system bus
CPU MHz:	1860
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	8 MB I+D on chip per chip, 4 MB shared / 2 cores

Continued on next page

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) kernel 2.6.16.21-0.8-smp
Compiler:	Intel C++ Compiler for Intel EM64T-based applications, Version 9.1 Build 20061101, Package ID: l_cc_c_9.1.045 Intel Fortran Compiler for Intel EM64T-based applications, Version 9.1 Build 20061101, Package ID: l_fc_c_9.1.040
Auto Parallel:	No

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L3 Cache:	None	File System:	ext2
Other Cache:	None	System State:	Multi-user run level 3
Memory:	16 GB (8x2 GB PC2-5300F CL5)	Base Pointers:	64-bit
Disk Subsystem:	1x72 GB 10k SAS	Peak Pointers:	32/64-bit
Other Hardware:	None	Other Software:	None

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	4318	25.2	**4314**	**25.2**	4314	25.2	8	**4312**	**25.2**	4314	25.2	4310	25.2
416.gamess	8	1537	102	**1533**	**102**	1532	102	8	1657	94.5	1659	94.4	**1659**	**94.4**
433.milc	8	4186	17.5	4191	17.5	**4187**	**17.5**	8	4145	17.7	**4145**	**17.7**	4149	17.7
434.zeusmp	8	1532	47.5	**1509**	**48.2**	1508	48.3	8	**1527**	**47.7**	1529	47.6	1523	47.8
435.gromacs	8	**649**	**88.1**	642	89.0	651	87.7	8	623	91.7	**623**	**91.7**	622	91.9
436.cactusADM	8	1761	54.3	1776	53.8	**1770**	**54.0**	8	1802	53.0	1791	53.4	**1801**	**53.1**
437.leslie3d	8	4097	18.4	4110	18.3	**4100**	**18.3**	8	4110	18.3	4092	18.4	**4106**	**18.3**
444.namd	8	820	78.2	820	78.2	**820**	**78.2**	8	833	77.0	831	77.2	**833**	**77.0**
447.dealII	8	**977**	**93.6**	978	93.5	973	94.0	8	**954**	**95.9**	950	96.3	956	95.7
450.soplex	8	2831	23.6	**2830**	**23.6**	2827	23.6	8	2831	23.6	2836	23.5	**2833**	**23.6**
453.povray	8	**417**	**102**	415	103	417	102	8	**317**	**134**	316	134	319	133
454.calculix	8	890	74.1	**897**	**73.6**	902	73.2	8	**882**	**74.9**	871	75.8	889	74.3
459.GemsFDTD	8	4914	17.3	**4910**	**17.3**	4910	17.3	8	**4916**	**17.3**	4917	17.3	4916	17.3
465.tonto	8	1349	58.4	1364	57.7	**1358**	**58.0**	8	1320	59.7	1314	59.9	**1314**	**59.9**
470.lbm	8	5758	19.1	5739	19.2	**5744**	**19.1**	8	5741	19.1	**5739**	**19.2**	5738	19.2
481.wrf	8	2473	36.1	**2469**	**36.2**	2467	36.2	8	2459	36.3	2476	36.1	**2474**	**36.1**
482.sphinx3	8	4566	34.1	4559	34.2	**4565**	**34.2**	8	4546	34.3	4538	34.4	**4541**	**34.3**

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

Platform Notes

```
Power Regulator set to Static High Performance Mode in BIOS.
Adjacent Sector Prefetch Disabled in BIOS.
"/usr/bin/taskset" used to bind processes to CPUs.
Environment stack size set to 'unlimited'
```

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

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Base Compiler Invocation (Continued)

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icc ifort
```

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 -nofor_main
  436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
    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 -nofor_main
  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
```

C++ benchmarks:
```
-fast
```

Fortran benchmarks:
```
-fast
```

Benchmarks using both Fortran and C:
```
-fast
```

Peak Compiler Invocation

C benchmarks:
```
icc
```

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Peak Compiler Invocation (Continued)

C++ benchmarks:
```
icpc
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icc ifort
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:
```
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32
```

C++ benchmarks:
```
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32
```

Fortran benchmarks:
```
-prof_gen(pass 1) -prof_use(pass 2) -fast
```

Benchmarks using both Fortran and C:
```
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/hp-ic91-flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-ic91-flags.xml

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

Tested with SPEC CPU2006 v1.0.
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