



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 57.3

ProLiant ML370 G5
(3.33 GHz, Intel Xeon processor X5260)

SPECfp_rate_base2006 = 51.0

CPU2006 license: 3

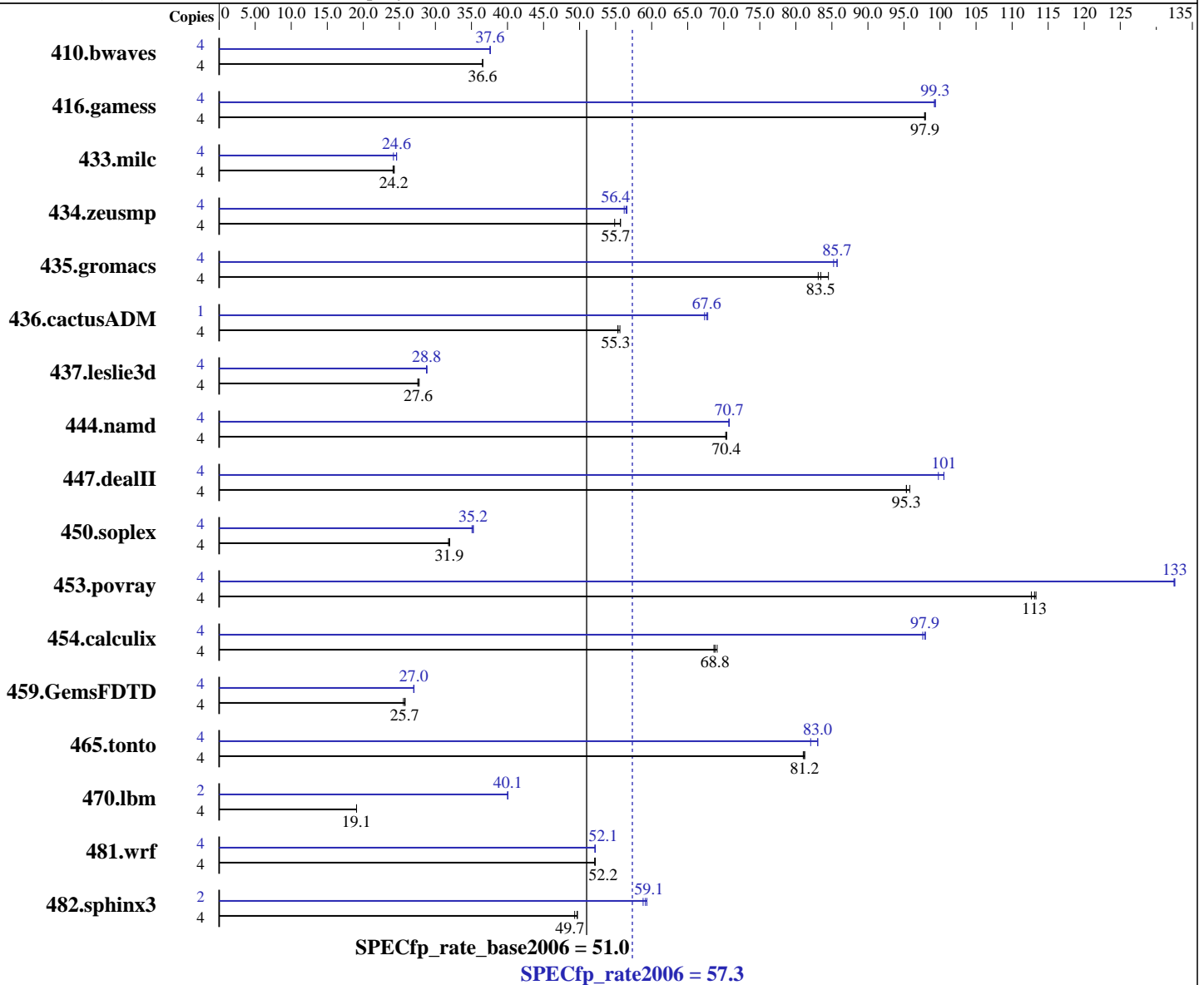
Test date: Jan-2008

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jan-2008

Tested by: Hewlett-Packard Company

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X5260
 CPU Characteristics: 3.33 GHz, 6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3333
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1
 Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ Compiler for applications running on IA-32 and Intel 64, Version 10.1
 Build 20070913 Package ID: l_cc_p_10.1.008
 Intel Fortran Compiler for applications running on IA-32 and Intel 64, Version 10.1
 Build 20070913 Package ID: l_cc_p_10.1.008
 Auto Parallel: Yes
 File System: ext2

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GB 15 K SAS
Other Hardware: None

System State: Multi-user run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1488	36.5	<u>1487</u>	<u>36.6</u>	1486	36.6	4	<u>1446</u>	<u>37.6</u>	1446	37.6	1445	37.6
416.gamess	4	<u>800</u>	<u>97.9</u>	799	98.0	800	97.9	4	<u>789</u>	<u>99.3</u>	789	99.2	788	99.4
433.milc	4	1522	24.1	<u>1515</u>	<u>24.2</u>	1512	24.3	4	1519	24.2	1492	24.6	<u>1492</u>	<u>24.6</u>
434.zeusmp	4	654	55.7	<u>654</u>	<u>55.7</u>	663	54.9	4	643	56.6	<u>645</u>	<u>56.4</u>	648	56.2
435.gromacs	4	338	84.5	344	83.1	<u>342</u>	<u>83.5</u>	4	335	85.2	<u>333</u>	<u>85.7</u>	333	85.7
436.cactusADM	4	<u>864</u>	<u>55.3</u>	860	55.6	864	55.3	1	176	67.8	<u>177</u>	<u>67.6</u>	177	67.3
437.leslie3d	4	1355	27.7	1364	27.6	<u>1361</u>	<u>27.6</u>	4	1304	28.8	<u>1307</u>	<u>28.8</u>	1307	28.8
444.namd	4	456	70.4	457	70.3	<u>456</u>	<u>70.4</u>	4	453	70.8	<u>453</u>	<u>70.7</u>	454	70.7
447.dealII	4	478	95.8	480	95.3	<u>480</u>	<u>95.3</u>	4	<u>455</u>	<u>101</u>	455	101	459	99.8
450.soplex	4	1048	31.8	1043	32.0	<u>1045</u>	<u>31.9</u>	4	951	35.1	946	35.3	<u>947</u>	<u>35.2</u>
453.povray	4	188	113	<u>188</u>	<u>113</u>	189	113	4	161	132	161	133	<u>161</u>	<u>133</u>
454.calculix	4	<u>480</u>	<u>68.8</u>	478	69.1	481	68.6	4	337	98.0	<u>337</u>	<u>97.9</u>	338	97.6
459.GemsFDTD	4	1660	25.6	<u>1648</u>	<u>25.7</u>	1645	25.8	4	1572	27.0	1570	27.0	<u>1572</u>	<u>27.0</u>
465.tonto	4	<u>485</u>	<u>81.2</u>	485	81.2	486	81.0	4	474	83.0	<u>474</u>	<u>83.0</u>	480	82.1
470.lbm	4	2884	19.1	<u>2884</u>	<u>19.1</u>	2883	19.1	2	<u>686</u>	<u>40.1</u>	687	40.0	686	40.1
481.wrf	4	856	52.2	858	52.1	<u>857</u>	<u>52.2</u>	4	857	52.1	856	52.2	<u>857</u>	<u>52.1</u>
482.sphinx3	4	1581	49.3	1568	49.7	<u>1570</u>	<u>49.7</u>	2	657	59.3	663	58.8	<u>659</u>	<u>59.1</u>

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M

Platform Notes

BIOS configuration:
Power Regulator set to Static High Performance Mode



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Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

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



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/include
```

Benchmarks using both Fortran and C:

icc ifort

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
444.namd: -DSPEC_CPU_LP64
447.deall: -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
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3
```

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.html>



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

<http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.xml>

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