



SPEC® CFP2006 Result

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Hewlett-Packard Company

SPECfp®_rate2006 = 56.8

ProLiant BL460c
(3.33 GHz, Intel Xeon processor X5260)

SPECfp_rate_base2006 = 50.5

CPU2006 license: 3

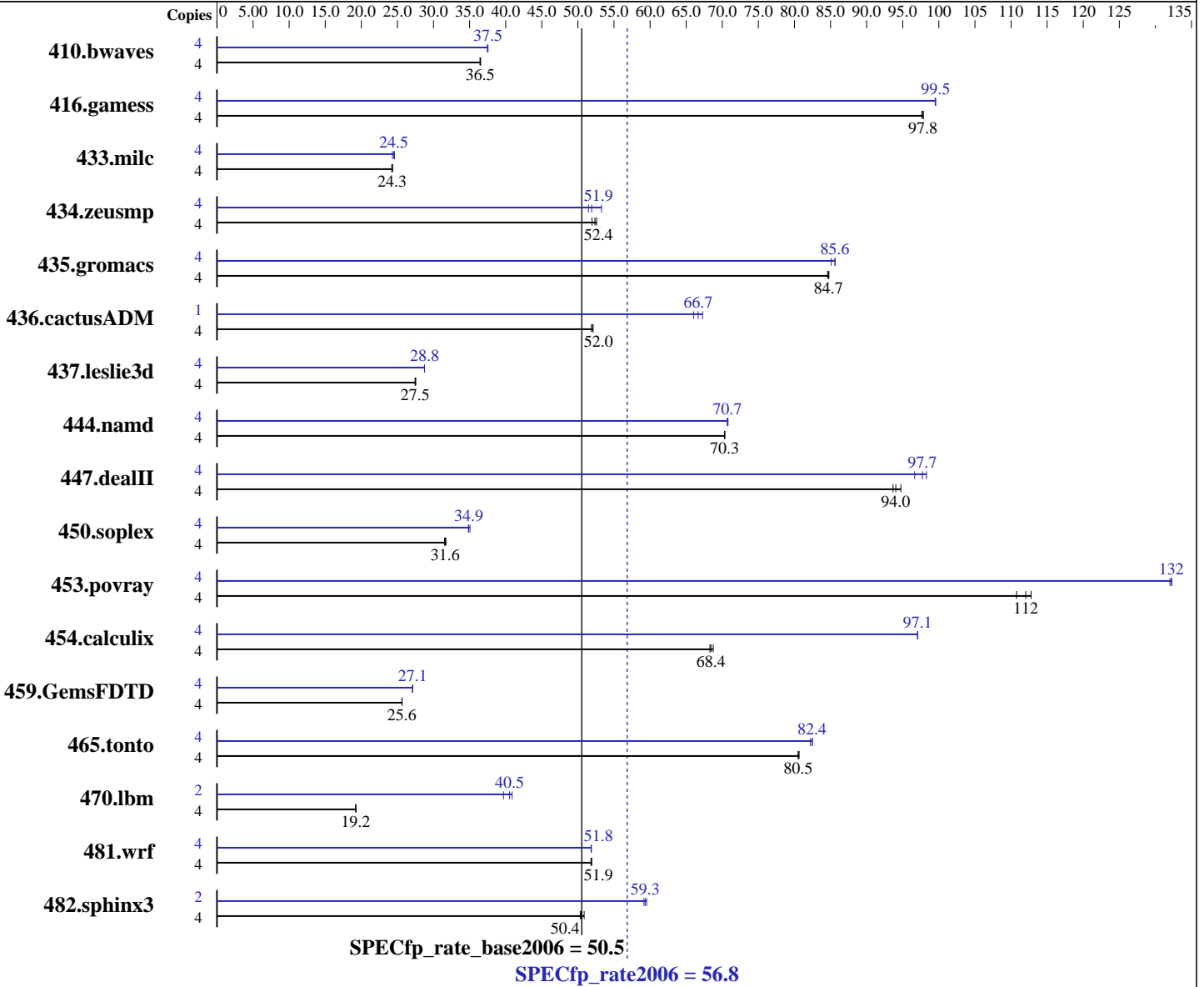
Test date: Dec-2007

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>1491</u>	<u>36.5</u>	1491	36.5	4	1451	37.5	<u>1448</u>	<u>37.5</u>	1448	37.5		
416.gamess	4	802	97.6	800	97.9	<u>801</u>	<u>97.8</u>	4	787	99.5	787	99.6	<u>787</u>	<u>99.5</u>		
433.milc	4	1509	24.3	1516	24.2	<u>1513</u>	<u>24.3</u>	4	1493	24.6	1510	24.3	<u>1498</u>	<u>24.5</u>		
434.zeusmp	4	692	52.6	<u>695</u>	<u>52.4</u>	701	51.9	4	683	53.3	<u>701</u>	<u>51.9</u>	707	51.5		
435.gromacs	4	<u>337</u>	<u>84.7</u>	338	84.6	337	84.8	4	336	85.1	<u>334</u>	<u>85.6</u>	334	85.6		
436.cactusADM	4	922	51.9	917	52.1	<u>918</u>	<u>52.0</u>	1	178	67.3	181	66.0	<u>179</u>	<u>66.7</u>		
437.leslie3d	4	1369	27.5	<u>1369</u>	<u>27.5</u>	1365	27.5	4	1308	28.7	<u>1308</u>	<u>28.8</u>	1308	28.8		
444.namd	4	456	70.3	<u>456</u>	<u>70.3</u>	456	70.4	4	453	70.8	454	70.7	<u>454</u>	<u>70.7</u>		
447.dealII	4	<u>487</u>	<u>94.0</u>	489	93.7	483	94.7	4	466	98.3	473	96.7	<u>468</u>	<u>97.7</u>		
450.soplex	4	1058	31.5	1052	31.7	<u>1055</u>	<u>31.6</u>	4	958	34.8	<u>956</u>	<u>34.9</u>	952	35.1		
453.povray	4	189	113	<u>190</u>	<u>112</u>	192	111	4	161	132	<u>161</u>	<u>132</u>	161	132		
454.calculix	4	<u>482</u>	<u>68.4</u>	483	68.3	480	68.7	4	340	97.0	<u>340</u>	<u>97.1</u>	340	97.1		
459.GemsFDTD	4	<u>1655</u>	<u>25.6</u>	1655	25.6	1656	25.6	4	1565	27.1	<u>1566</u>	<u>27.1</u>	1567	27.1		
465.tonto	4	488	80.6	<u>489</u>	<u>80.5</u>	489	80.5	4	477	82.5	<u>477</u>	<u>82.4</u>	479	82.2		
470.lbm	4	<u>2857</u>	<u>19.2</u>	2857	19.2	2857	19.2	2	692	39.7	672	40.9	<u>678</u>	<u>40.5</u>		
481.wrf	4	862	51.8	<u>861</u>	<u>51.9</u>	861	51.9	4	<u>862</u>	<u>51.8</u>	861	51.9	862	51.8		
482.sphinx3	4	1549	50.3	<u>1545</u>	<u>50.4</u>	1533	50.9	2	<u>657</u>	<u>59.3</u>	659	59.2	655	59.5		

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
Adjacent Sector Prefetch Disabled



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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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