SPEC® CFP2006 Result

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Hewlett-Packard Company

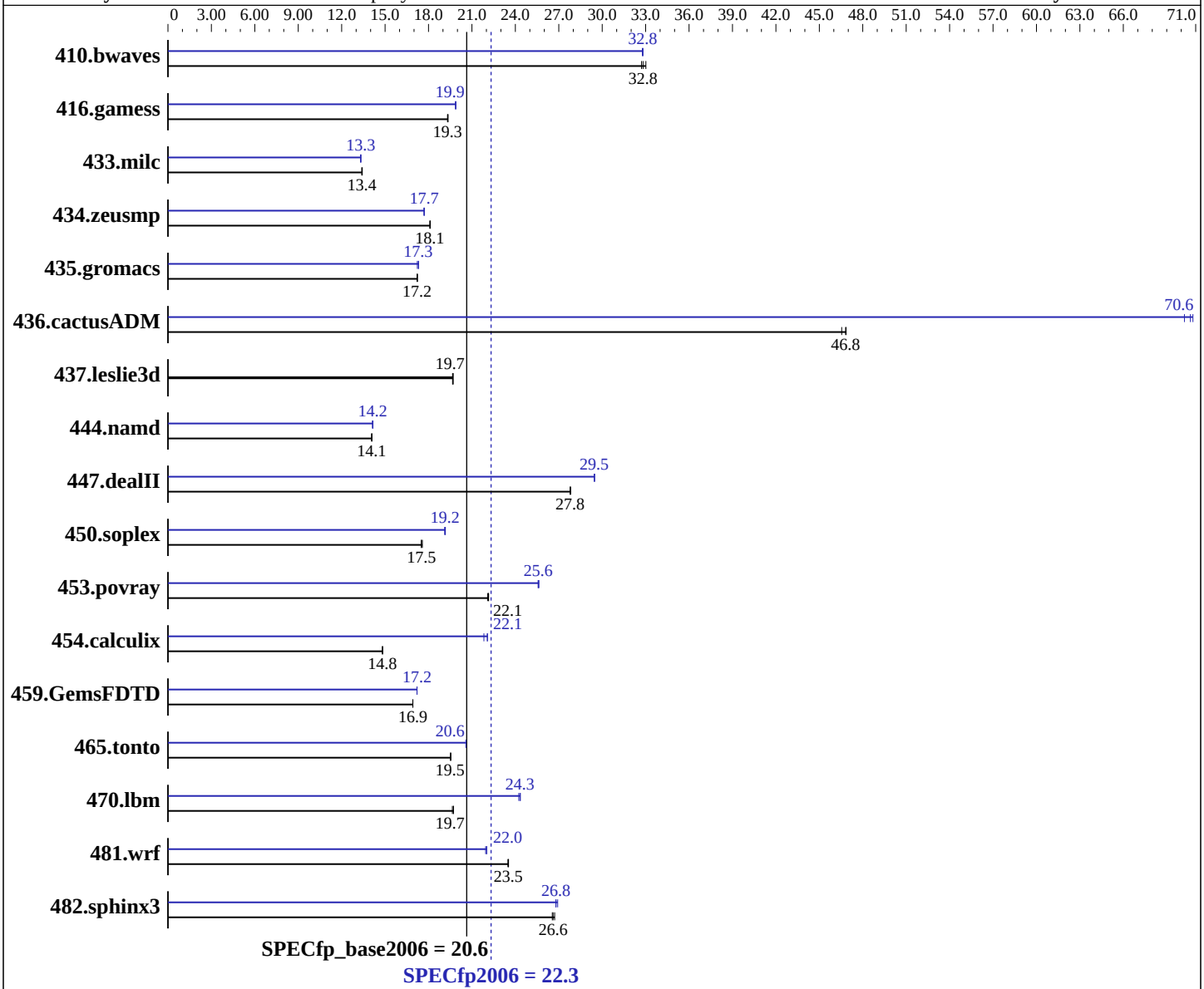
ProLiant DL320 G5p
(2.66 GHz, Intel Xeon processor X3350)

SPECfp®2006 = 22.3

SPECfp_base2006 = 20.6

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

Test date: Feb-2008
Hardware Availability: May-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X3350
CPU Characteristics:	2.66 GHz, 2x6 MB L2 shared, 1333 MHz system bus
CPU MHz:	2666
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008 Intel Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-6400E CL5)
Disk Subsystem: 1x80 GB 7.2 K SATA
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**414**	**32.8**	412	33.0	415	32.7	**414**	**32.8**	414	32.8	415	32.8
416.gamess	1014	19.3	**1013**	**19.3**	1012	19.4	984	19.9	**985**	**19.9**	986	19.9
433.milc	684	13.4	686	13.4	**685**	**13.4**	689	13.3	690	13.3	**689**	**13.3**
434.zeusmp	**503**	**18.1**	502	18.1	503	18.1	515	17.7	**514**	**17.7**	514	17.7
435.gromacs	**415**	**17.2**	414	17.2	415	17.2	**413**	**17.3**	414	17.2	412	17.3
436.cactusADM	**255**	**46.8**	257	46.5	255	46.9	170	70.2	169	70.8	**169**	**70.6**
437.leslie3d	478	19.7	477	19.7	**477**	**19.7**	478	19.7	477	19.7	**477**	**19.7**
444.namd	570	14.1	569	14.1	**570**	**14.1**	568	14.1	**567**	**14.2**	566	14.2
447.dealII	411	27.8	**412**	**27.8**	412	27.8	**388**	**29.5**	388	29.5	388	29.5
450.soplex	475	17.6	**476**	**17.5**	476	17.5	436	19.1	435	19.2	**435**	**19.2**
453.povray	240	22.2	241	22.1	**240**	**22.1**	208	25.6	**208**	**25.6**	208	25.6
454.calculix	556	14.8	**557**	**14.8**	557	14.8	378	21.8	**374**	**22.1**	374	22.1
459.GemsFDTD	**627**	**16.9**	627	16.9	627	16.9	**617**	**17.2**	617	17.2	617	17.2
465.tonto	504	19.5	504	19.5	**504**	**19.5**	**478**	**20.6**	478	20.6	478	20.6
470.lbm	697	19.7	**697**	**19.7**	699	19.6	564	24.3	**565**	**24.3**	567	24.2
481.wrf	**475**	**23.5**	476	23.5	475	23.5	**507**	**22.0**	507	22.0	509	21.9
482.sphinx3	730	26.7	**733**	**26.6**	734	26.6	727	26.8	724	26.9	**727**	**26.8**

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
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M
```

Platform Notes

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

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 -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

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:
`ifort`

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`
437.leslie3d: `-DSPEC_CPU_LP64`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-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.dealII: `-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 -parallel`

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: `basepeak = yes`

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

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 -parallel -prefetch -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`

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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For other inquiries, please contact webmaster@spec.org.

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