SPEC® CFP2006 Result

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Hewlett-Packard Company

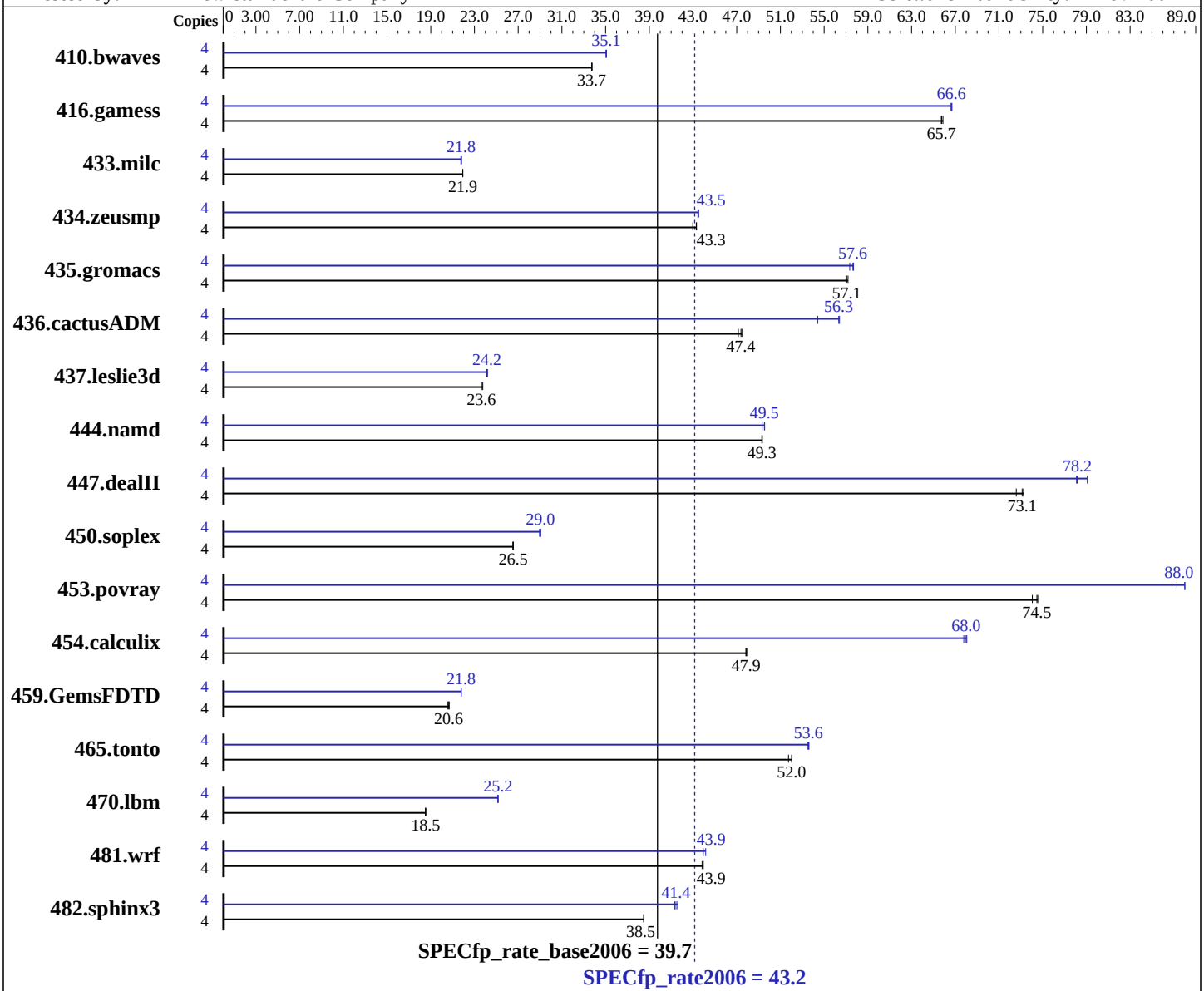
ProLiant DL380 G5
(2.33 GHz, Intel Xeon processor 5140)

SPECfp®_rate2006 = 43.2

SPECfp_rate_base2006 = 39.7

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

Test date: Sep-2007
Hardware Availability: Jun-2006
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon 5140
CPU Characteristics:	2.33 GHz, 2x4 MB L2 shared, 1333 MHz system bus
CPU MHz:	2333
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1 or 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 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++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
Auto Parallel:	No
File System:	ext2
System State:	Multi-user run level 3
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (8x1 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GB 10 K SAS
Other Hardware: None

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	**1611**	**33.7**	1611	33.7	1611	33.7	4	**1550**	**35.1**	1551	35.0	1550	35.1
416.gamess	4	1189	65.9	**1191**	**65.7**	1191	65.7	4	**1175**	**66.6**	1176	66.6	1174	66.7
433.milc	4	1675	21.9	**1674**	**21.9**	1674	21.9	4	**1685**	**21.8**	1688	21.8	1683	21.8
434.zeusmp	4	**841**	**43.3**	840	43.3	847	43.0	4	**837**	**43.5**	838	43.4	837	43.5
435.gromacs	4	501	57.0	**501**	**57.1**	499	57.2	4	495	57.7	498	57.3	**496**	**57.6**
436.cactusADM	4	1014	47.1	**1009**	**47.4**	1007	47.5	4	847	56.4	**849**	**56.3**	878	54.4
437.leslie3d	4	1582	23.8	1591	23.6	**1591**	**23.6**	4	1558	24.1	1554	24.2	**1557**	**24.2**
444.namd	4	651	49.3	650	49.3	**651**	**49.3**	4	647	49.6	650	49.3	**648**	**49.5**
447.dealII	4	625	73.2	**626**	**73.1**	630	72.6	4	**585**	**78.2**	579	79.1	586	78.1
450.soplex	4	1258	26.5	**1257**	**26.5**	1257	26.5	4	1152	29.0	1148	29.1	**1149**	**29.0**
453.povray	4	**286**	**74.5**	287	74.1	285	74.5	4	244	87.3	242	88.0	**242**	**88.0**
454.calculix	4	689	47.9	**690**	**47.9**	690	47.8	4	485	68.1	487	67.8	**485**	**68.0**
459.GemsFDTD	4	**2056**	**20.6**	2051	20.7	2063	20.6	4	1947	21.8	**1948**	**21.8**	1949	21.8
465.tonto	4	756	52.1	761	51.7	**757**	**52.0**	4	734	53.6	735	53.5	**735**	**53.6**
470.lbm	4	**2966**	**18.5**	2966	18.5	2966	18.5	4	**2185**	**25.2**	2185	25.2	2185	25.1
481.wrf	4	1019	43.8	**1017**	**43.9**	1017	43.9	4	1012	44.2	1017	43.9	**1017**	**43.9**
482.sphinx3	4	**2025**	**38.5**	2024	38.5	2026	38.5	4	1887	41.3	**1881**	**41.4**	1875	41.6

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
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

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Fortran benchmarks (except as noted below):
```
ifort
```

437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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.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`

Continued on next page

Peak Optimization Flags (Continued)

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

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`

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 -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-flags.20090714.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-flags.20090714.xml`

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