SPEC® CFP2006 Result

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Dell Inc.

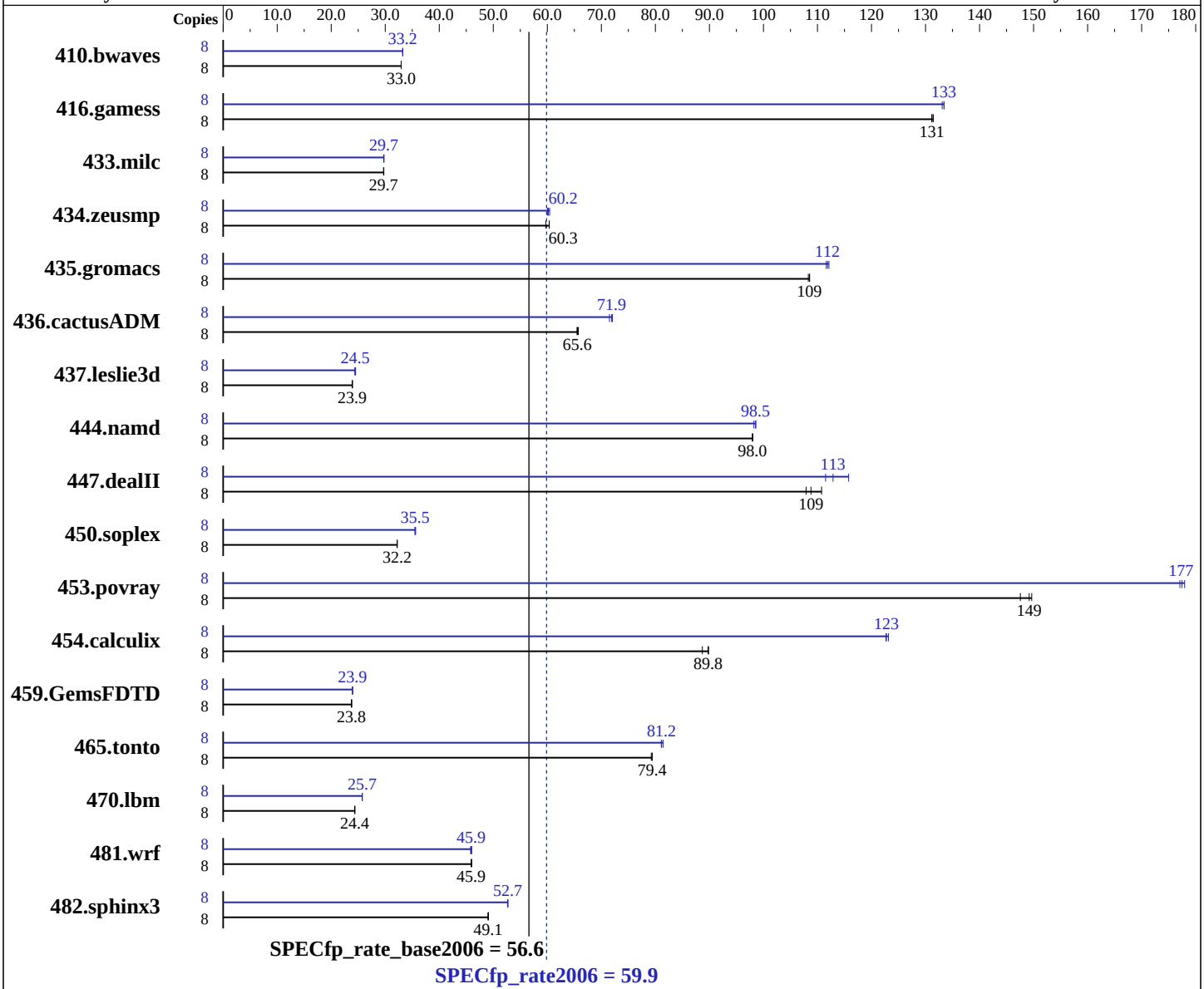
PowerEdge 2950 (Intel Xeon E5345, 2.33GHz)

SPECfp®_rate2006 = 59.9

SPECfp_rate_base2006 = 56.6

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

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



Hardware

CPU Name:	Intel Xeon E5345
CPU Characteristics:	1333MHz system bus
CPU MHz:	2333
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

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Software

Operating System:	64-Bit SUSE LINUX Enterprise Server 10
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
Auto Parallel:	No
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB 667 MHz ECC CL5 FB-DIMM)
Disk Subsystem: 1 x 73 GB SAS 15k RPM
Other Hardware: None

Other Software: SmartHeap library V8.1

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3299	33.0	**3299**	**33.0**	3299	33.0	8	3269	33.3	**3270**	**33.2**	3273	33.2
416.gamess	8	1192	131	**1194**	**131**	1194	131	8	**1174**	**133**	1174	133	1177	133
433.milc	8	**2473**	**29.7**	2473	29.7	2469	29.7	8	**2469**	**29.7**	2467	29.8	2472	29.7
434.zeusmp	8	**1206**	**60.3**	1206	60.4	1219	59.7	8	**1209**	**60.2**	1213	60.0	1205	60.4
435.gromacs	8	526	109	527	108	**526**	**109**	8	512	112	**511**	**112**	509	112
436.cactusADM	8	1460	65.5	1454	65.7	**1458**	**65.6**	8	1327	72.0	**1329**	**71.9**	1337	71.5
437.leslie3d	8	3143	23.9	3149	23.9	**3145**	**23.9**	8	3086	24.4	**3072**	**24.5**	3068	24.5
444.namd	8	655	98.0	655	98.0	**655**	**98.0**	8	653	98.2	**651**	**98.5**	651	98.6
447.dealII	8	848	108	**841**	**109**	826	111	8	**811**	**113**	791	116	821	112
450.soplex	8	2071	32.2	**2072**	**32.2**	2073	32.2	8	**1878**	**35.5**	1873	35.6	1879	35.5
453.povray	8	**285**	**149**	288	148	284	150	8	**240**	**177**	239	178	240	177
454.calculix	8	744	88.7	**735**	**89.8**	735	89.8	8	536	123	**538**	**123**	538	123
459.GemsFDTD	8	3578	23.7	**3574**	**23.8**	3565	23.8	8	3546	23.9	**3545**	**23.9**	3544	23.9
465.tonto	8	991	79.4	994	79.2	**991**	**79.4**	8	966	81.5	**970**	**81.2**	971	81.1
470.lbm	8	**4511**	**24.4**	4511	24.4	4513	24.4	8	**4271**	**25.7**	4271	25.7	4270	25.7
481.wrf	8	1947	45.9	**1946**	**45.9**	1942	46.0	8	**1946**	**45.9**	1952	45.8	1942	46.0
482.sphinx3	8	3176	49.1	3180	49.0	**3178**	**49.1**	8	2962	52.6	2957	52.7	**2961**	**52.7**

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
```

Platform Notes

```
BIOS Settings:
 Adjacent Cache Line Prefetch = Disabled (default Enabled)
 Hardware Prefetcher = Disabled (default Enabled)
```

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/Intel-ic10.1-FP-intel64-linux-flags.20090714.17.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.17.xml

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