SPEC® CFP2006 Result

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Dell Inc.

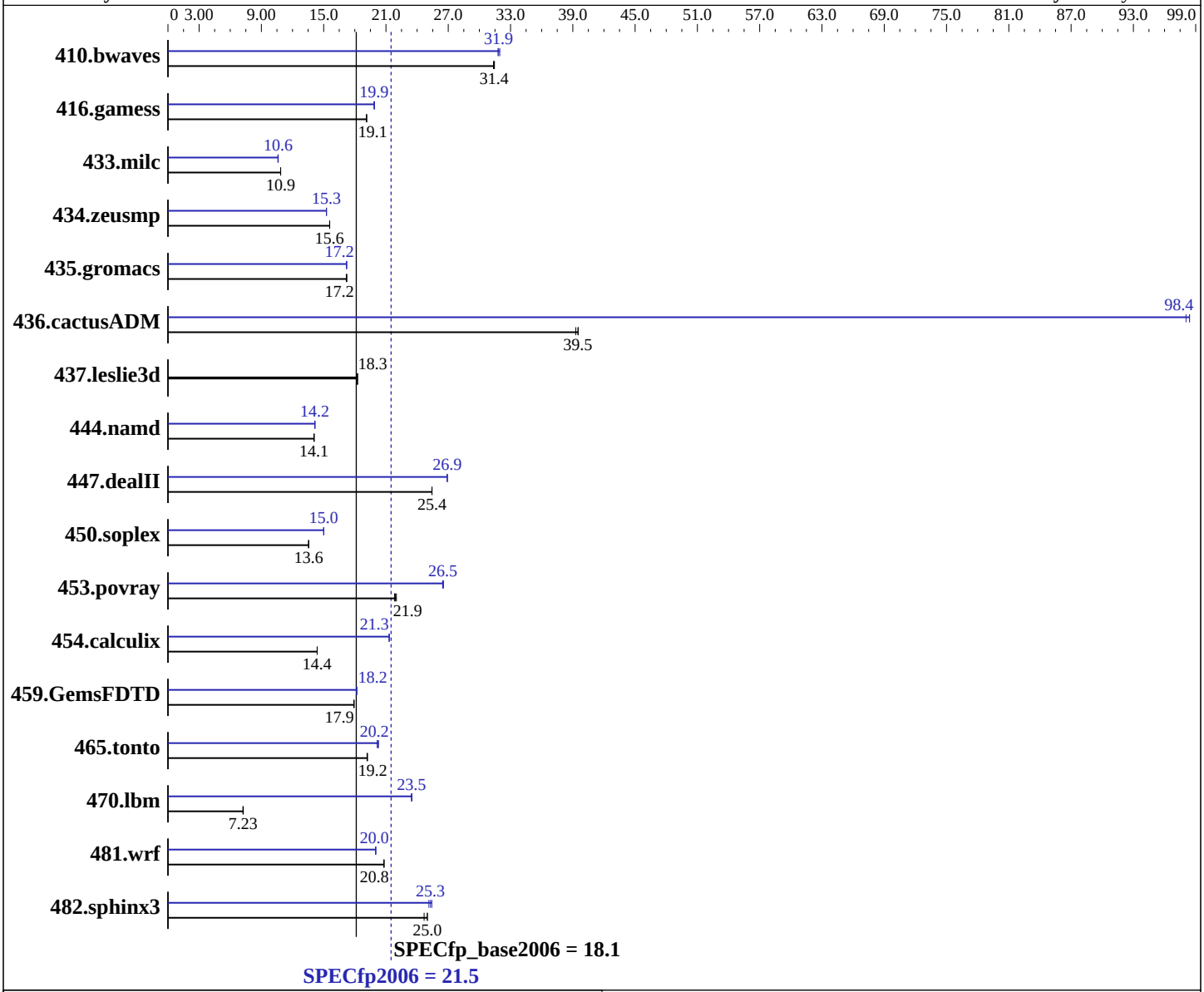
PowerEdge M600 (Intel Xeon E5430, 2.66 GHz)

SPECfp®2006 = 21.5

SPECfp_base2006 = 18.1

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

Test date: Aug-2008
Hardware Availability: Jan-2008
Software Availability: May-2008



Hardware

CPU Name:	Intel Xeon E5430
CPU Characteristics:	
CPU MHz:	2666
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:	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) SP2, Kernel 2.6.16-60.0.21-smp
Compiler:	Intel C++ and Fortran Compiler 10.1 for Linux Build 20080312 Package ID: l_cc_p_10.1.015, l_fc_p_10.1.015
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4 x 4 GB 667 MHz ECC CL5 FB-DIMM)
Disk Subsystem: 1 x 80 GB 5400 RPM SATA
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	433	31.4	432	31.5	**433**	**31.4**	427	31.8	**427**	**31.9**	425	32.0
416.gamess	**1024**	**19.1**	1023	19.1	1024	19.1	984	19.9	986	19.9	**986**	**19.9**
433.milc	846	10.9	845	10.9	**846**	**10.9**	867	10.6	864	10.6	**865**	**10.6**
434.zeusmp	584	15.6	**584**	**15.6**	584	15.6	596	15.3	**596**	**15.3**	596	15.3
435.gromacs	415	17.2	**415**	**17.2**	416	17.2	415	17.2	**415**	**17.2**	415	17.2
436.cactusADM	304	39.3	**303**	**39.5**	302	39.5	122	98.1	**121**	**98.4**	121	98.4
437.leslie3d	515	18.3	**515**	**18.3**	516	18.2	515	18.3	**515**	**18.3**	516	18.2
444.namd	**570**	**14.1**	569	14.1	570	14.1	567	14.1	566	14.2	**567**	**14.2**
447.dealII	**450**	**25.4**	450	25.4	450	25.4	426	26.9	**425**	**26.9**	425	26.9
450.soplex	616	13.5	615	13.6	**615**	**13.6**	555	15.0	556	15.0	**556**	**15.0**
453.povray	242	22.0	**243**	**21.9**	244	21.8	200	26.5	**201**	**26.5**	201	26.5
454.calculix	**574**	**14.4**	574	14.4	574	14.4	387	21.3	387	21.3	**387**	**21.3**
459.GemsFDTD	592	17.9	592	17.9	**592**	**17.9**	**584**	**18.2**	583	18.2	584	18.2
465.tonto	512	19.2	**513**	**19.2**	513	19.2	485	20.3	**487**	**20.2**	488	20.2
470.lbm	**1899**	**7.23**	1901	7.23	1892	7.26	**585**	**23.5**	585	23.5	586	23.5
481.wrf	536	20.8	**537**	**20.8**	537	20.8	**558**	**20.0**	558	20.0	558	20.0
482.sphinx3	**780**	**25.0**	790	24.7	780	25.0	767	25.4	775	25.1	**771**	**25.3**

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 stack size to unlimited prior to run

General Notes

All benchmarks compiled in 64-bit mode except 450.soplex,
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 200M

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/10.1.015/bin/icc -L/opt/intel/cc/10.1.015/lib -I/opt/intel/cc/10.1.015/include`

433.milc: `icc`

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

450.soplex: `/opt/intel/cc/10.1.015/bin/icpc -L/opt/intel/cc/10.1.015/lib -I/opt/intel/cc/10.1.015/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 files that were used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revD.20090713.html`
`http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.html`

You can also download the XML flags sources by saving the following links:

`http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revD.20090713.xml`
`http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.xml`

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