SPEC® CFP2006 Result
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Dell Inc.

PowerEdge M600 (Intel Xeon E5450, 3.00 GHz)

$SPECfp®2006 =$ 22.8

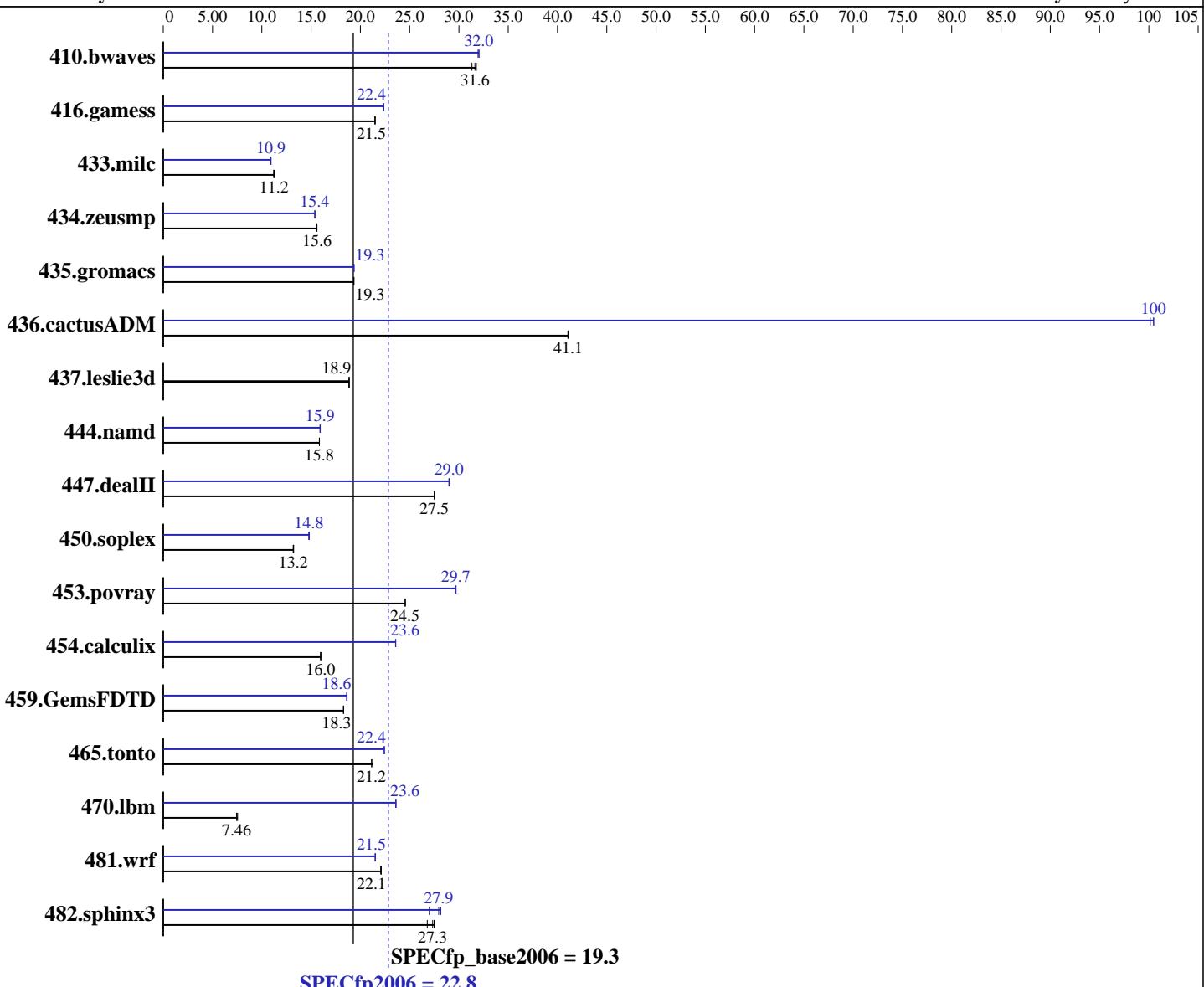$SPECfp\_base2006 =$ 19.3

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

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

Benchmark	Peak	Base
410.bwaves	32.0	31.6
416.gamess	22.4	21.5
433.milc	10.9	11.2
434.zeusmp	15.4	15.6
435.gromacs	19.3	19.3
436.cactusADM	100	41.1
437.leslie3d		18.9
444.namd	15.9	15.8
447.dealII	29.0	27.5
450.soplex	14.8	13.2
453.povray	29.7	24.5
454.calculix	23.6	16.0
459.GemsFDTD	18.6	18.3
465.tonto	22.4	21.2
470.lbm	23.6	7.46
481.wrf	21.5	22.1
482.sphinx3	27.9	27.3

SPECfp_base2006 = 19.3
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Hardware

CPU Name: Intel Xeon E5450
CPU Characteristics:
CPU MHz: 3000
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

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	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.18.50.0.7.20080502
Memory:	16 GB (4x4 GB, DDR2-667 MHz, CL5, Reg, Dual Rank)		
Disk Subsystem:	1 x 80 GB SATA 5400 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	434	31.3	**430**	**31.6**	428	31.8	426	31.9	**424**	**32.0**	424	32.0
416.gamess	912	21.5	**911**	**21.5**	911	21.5	877	22.3	875	22.4	**876**	**22.4**
433.milc	820	11.2	815	11.3	**816**	**11.2**	842	10.9	840	10.9	**840**	**10.9**
434.zeusmp	584	15.6	584	15.6	**584**	**15.6**	592	15.4	591	15.4	**592**	**15.4**
435.gromacs	370	19.3	369	19.4	**369**	**19.3**	**369**	**19.3**	369	19.3	369	19.4
436.cactusADM	**291**	**41.1**	291	41.1	291	41.1	**119**	**100**	119	100	119	100
437.leslie3d	498	18.9	**498**	**18.9**	499	18.8	498	18.9	**498**	**18.9**	499	18.8
444.namd	**506**	**15.8**	506	15.8	506	15.8	**504**	**15.9**	504	15.9	503	15.9
447.dealII	416	27.5	**416**	**27.5**	416	27.5	**395**	**29.0**	394	29.0	395	29.0
450.soplex	632	13.2	**632**	**13.2**	630	13.2	563	14.8	**564**	**14.8**	565	14.8
453.povray	217	24.5	216	24.6	**217**	**24.5**	**179**	**29.7**	179	29.7	180	29.6
454.calculix	516	16.0	**516**	**16.0**	517	16.0	350	23.6	350	23.6	**350**	**23.6**
459.GemsFDTD	580	18.3	**580**	**18.3**	580	18.3	570	18.6	569	18.6	**570**	**18.6**
465.tonto	463	21.3	**464**	**21.2**	466	21.1	438	22.4	440	22.3	**439**	**22.4**
470.lbm	1845	7.45	**1842**	**7.46**	1822	7.54	582	23.6	**582**	**23.6**	582	23.6
481.wrf	**506**	**22.1**	506	22.1	505	22.1	520	21.5	519	21.5	**519**	**21.5**
482.sphinx3	**713**	**27.3**	728	26.8	709	27.5	722	27.0	692	28.2	**697**	**27.9**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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
```

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Base Compiler Invocation (Continued)

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`

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CPU2006 license: 55		**Test date:**	Jul-2008
Test sponsor:	Dell Inc.	**Hardware Availability:**	Jan-2008
Tested by:	Dell Inc.	**Software Availability:**	May-2008

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

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You can also download the XML flags sources by saving the following links:
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http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.xml

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