SPEC® CFP2006 Result

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Dell Inc.

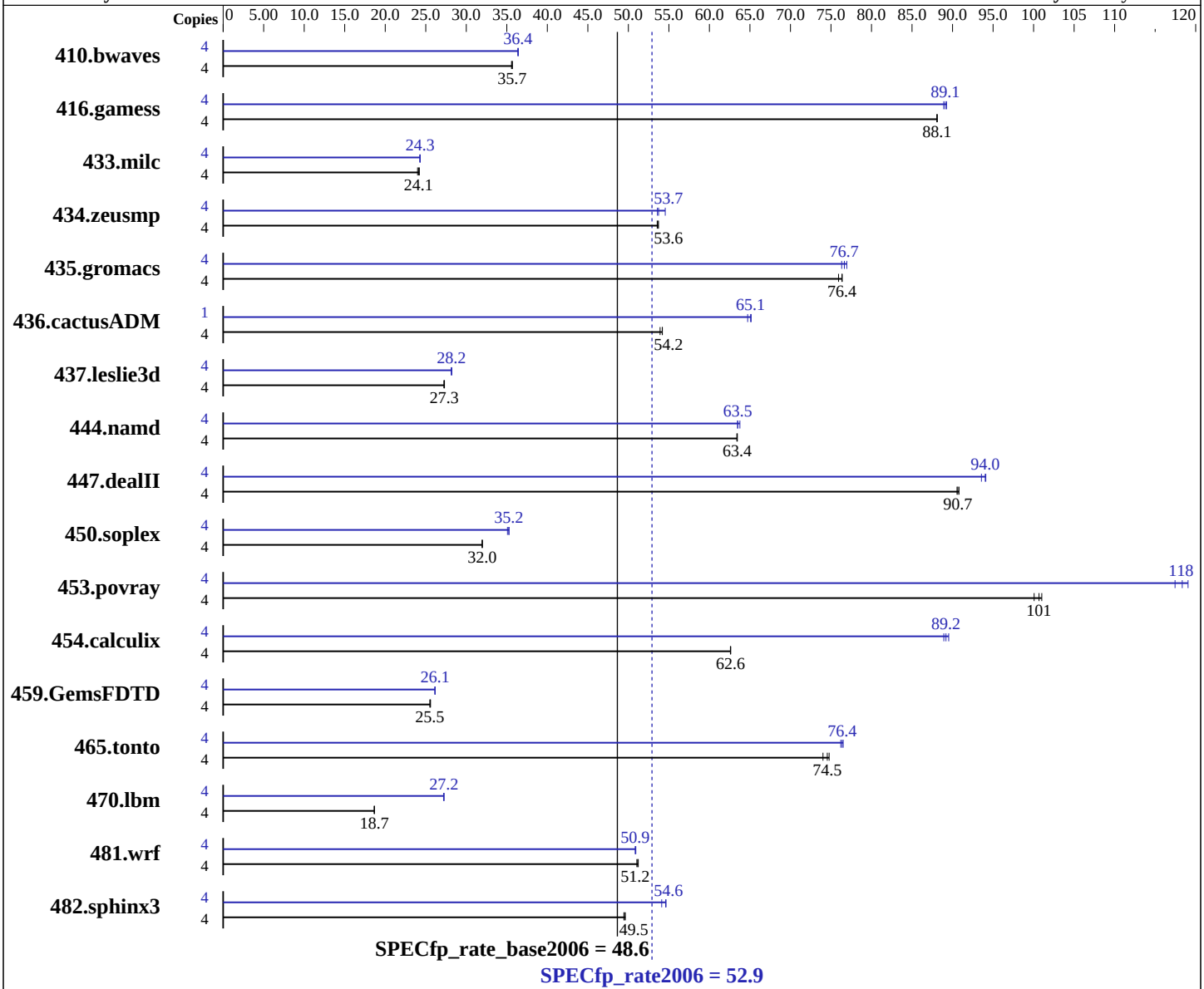
PowerEdge M600 (Intel Xeon L5240, 3.00GHz)

SPECfp®_rate2006 = 52.9

SPECfp_rate_base2006 = 48.6

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

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



Hardware

CPU Name:	Intel Xeon L5240
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip

Continued on next page

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 (4x4 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1528	35.6	**1525**	**35.7**	1523	35.7	4	1493	36.4	1495	36.4	**1493**	**36.4**
416.gamess	4	**889**	**88.1**	889	88.1	889	88.1	4	881	88.9	877	89.3	**879**	**89.1**
433.milc	4	1531	24.0	**1523**	**24.1**	1517	24.2	4	1510	24.3	**1511**	**24.3**	1514	24.3
434.zeusmp	4	680	53.6	678	53.7	**679**	**53.6**	4	679	53.6	**678**	**53.7**	667	54.6
435.gromacs	4	374	76.4	**374**	**76.4**	376	75.9	4	**373**	**76.7**	374	76.3	371	76.9
436.cactusADM	4	887	53.9	**882**	**54.2**	882	54.2	1	**184**	**65.1**	183	65.2	185	64.7
437.leslie3d	4	1381	27.2	**1378**	**27.3**	1377	27.3	4	1336	28.1	**1335**	**28.2**	1333	28.2
444.namd	4	506	63.4	**506**	**63.4**	506	63.4	4	503	63.8	**505**	**63.5**	505	63.5
447.dealII	4	505	90.6	504	90.8	**505**	**90.7**	4	489	93.6	**487**	**94.0**	486	94.1
450.soplex	4	1043	32.0	1044	32.0	**1044**	**32.0**	4	**947**	**35.2**	951	35.1	946	35.3
453.povray	4	213	100	**211**	**101**	211	101	4	181	117	**180**	**118**	179	119
454.calculix	4	527	62.6	**527**	**62.6**	527	62.6	4	**370**	**89.2**	371	88.9	369	89.5
459.GemsFDTD	4	**1663**	**25.5**	1658	25.6	1663	25.5	4	1625	26.1	1622	26.2	**1623**	**26.1**
465.tonto	4	526	74.8	532	74.0	**528**	**74.5**	4	516	76.2	**515**	**76.4**	514	76.5
470.lbm	4	2948	18.6	2945	18.7	**2945**	**18.7**	4	2021	27.2	**2017**	**27.2**	2017	27.3
481.wrf	4	872	51.2	875	51.0	**874**	**51.2**	4	877	50.9	**878**	**50.9**	879	50.9
482.sphinx3	4	1577	49.4	1571	49.6	**1574**	**49.5**	4	**1428**	**54.6**	1441	54.1	1427	54.6

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

Submit Notes

```
The config file option 'submit' was used.
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
```

Platform Notes

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

General Notes

```
All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex,
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
taskset was used to bind processes to cores except
for 436.cactusADM peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

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

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Base Optimization Flags (Continued)

C++ benchmarks:
`-fast`

Fortran benchmarks:
`-fast`

Benchmarks using both Fortran and C:
`-fast`

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 (except as noted below):
`ifort`

437.leslie3d: `/opt/intel/fc/10.1.015/bin/ifort -L/opt/intel/fc/10.1.015/lib -I/opt/intel/fc/10.1.015/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`

Continued on next page

Peak Portability Flags (Continued)

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

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:

Continued on next page

Peak Optimization Flags (Continued)

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

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