SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

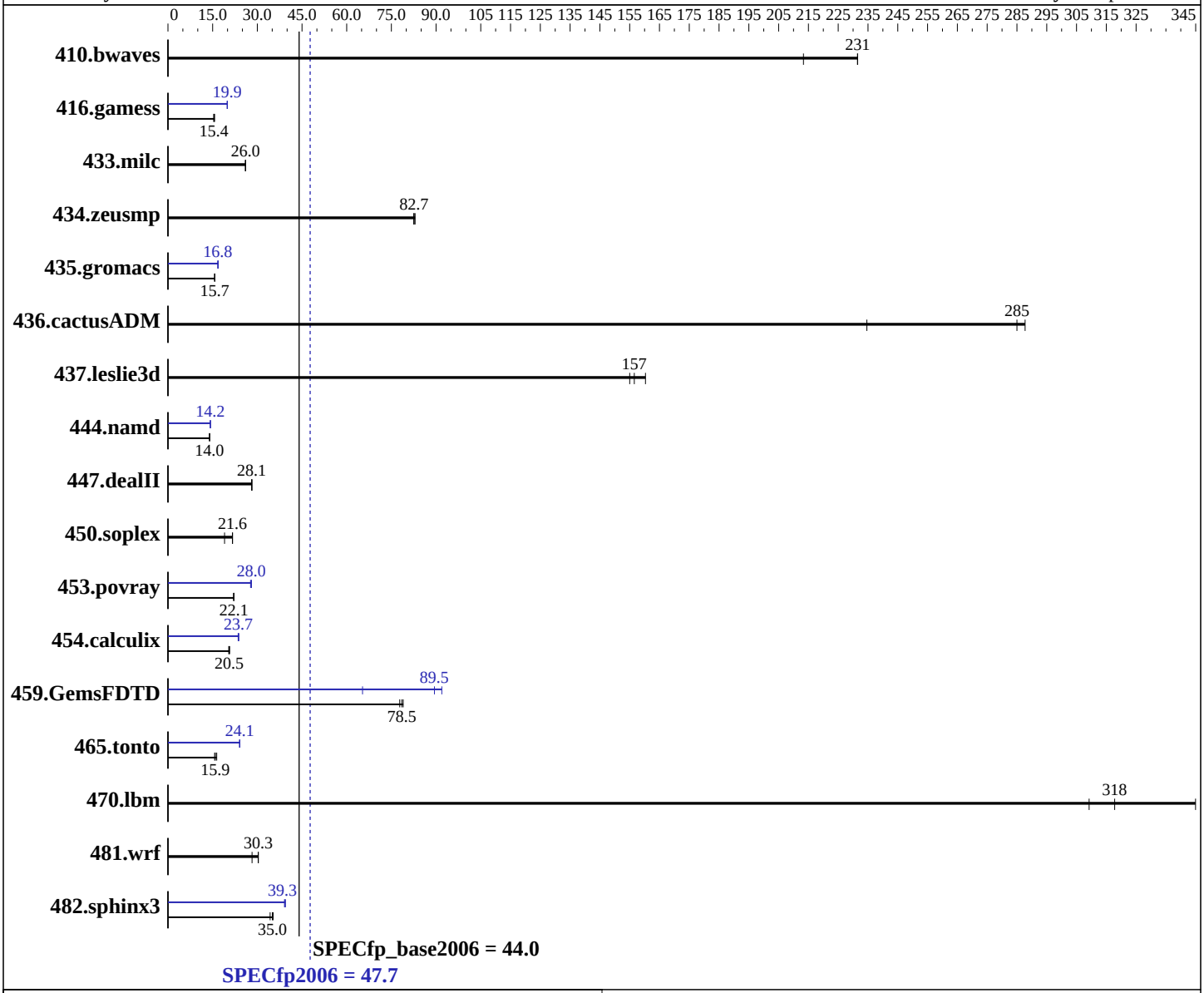
PowerEdge M910 (Intel Xeon E7-2850, 2.00 GHz)

SPECfp®2006 = 47.7

SPECfp_base2006 = 44.0

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

Test date: May-2011
Hardware Availability: Apr-2011
Software Availability: Apr-2011



Hardware

CPU Name:	Intel Xeon E7-2850
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge M910 (Intel Xeon E7-2850, 2.00 GHz)

SPECfp2006 = 47.7

SPECfp_base2006 = 44.0

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

Test date: May-2011
Hardware Availability: Apr-2011
Software Availability: Apr-2011

L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 4Rx8 PC3L-8500R-7, ECC)
Disk Subsystem: 1 x 146 GB 15000 RPM SAS
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	63.7	213	**58.7**	**231**	58.7	231	63.7	213	**58.7**	**231**	58.7	231
416.gamess	1250	15.7	**1268**	**15.4**	1274	15.4	982	19.9	**984**	**19.9**	985	19.9
433.milc	**353**	**26.0**	353	26.0	353	26.0	**353**	**26.0**	353	26.0	353	26.0
434.zeusmp	110	82.5	**110**	**82.7**	110	83.0	110	82.5	**110**	**82.7**	110	83.0
435.gromacs	**455**	**15.7**	455	15.7	455	15.7	**425**	**16.8**	423	16.9	427	16.7
436.cactusADM	41.5	288	50.9	235	**41.9**	**285**	41.5	288	50.9	235	**41.9**	**285**
437.leslie3d	60.6	155	58.6	160	**60.0**	**157**	60.6	155	58.6	160	**60.0**	**157**
444.namd	574	14.0	**574**	**14.0**	574	14.0	563	14.2	**563**	**14.2**	563	14.2
447.dealII	406	28.2	407	28.1	**406**	**28.1**	406	28.2	407	28.1	**406**	**28.1**
450.soplex	384	21.7	**385**	**21.6**	439	19.0	384	21.7	**385**	**21.6**	439	19.0
453.povray	**241**	**22.1**	242	22.0	240	22.2	190	28.0	**190**	**28.0**	192	27.7
454.calculix	404	20.4	398	20.7	**402**	**20.5**	347	23.8	350	23.6	**349**	**23.7**
459.GemsFDTD	134	79.0	136	77.8	**135**	**78.5**	**119**	**89.5**	115	91.9	162	65.3
465.tonto	628	15.7	**618**	**15.9**	601	16.4	408	24.1	**409**	**24.1**	409	24.0
470.lbm	**43.2**	**318**	39.8	345	44.4	309	**43.2**	**318**	39.8	345	44.4	309
481.wrf	396	28.2	368	30.3	**369**	**30.3**	396	28.2	368	30.3	**369**	**30.3**
482.sphinx3	552	35.3	568	34.3	**556**	**35.0**	494	39.4	498	39.1	**496**	**39.3**

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 stacksize to unlimited prior to run
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 900> /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
 BIOS Settings:
 Power Management = Maximum Performance (Default = Active Power Controller)
 Logical Processor = Disabled (Default = Enabled)
```

General Notes

```
OMP_NUM_THREADS set to number of cores
Binaries were compiled on RHEL5.5
```

Base Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc   -m64 ifort -m64
```

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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Continued on next page

Base Optimization Flags (Continued)

Fortran benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias`

Peak Compiler Invocation

C benchmarks:
`icc -m64`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

Peak Portability Flags

`Same as Base Portability Flags`

Peak Optimization Flags

C benchmarks:

433.milc: `basepeak = yes`

470.lbm: `basepeak = yes`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

C++ benchmarks:

444.namd: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2) `-fno-alias -auto-ilp32`

447.dealII: `basepeak = yes`

Continued on next page

Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 17:27:00 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 21 June 2011.