



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]2006 = 87.4

PowerEdge M620 (Intel Xeon E5-2680, 2.70 GHz)

SPECfp_base2006 = 82.8

CPU2006 license: 55

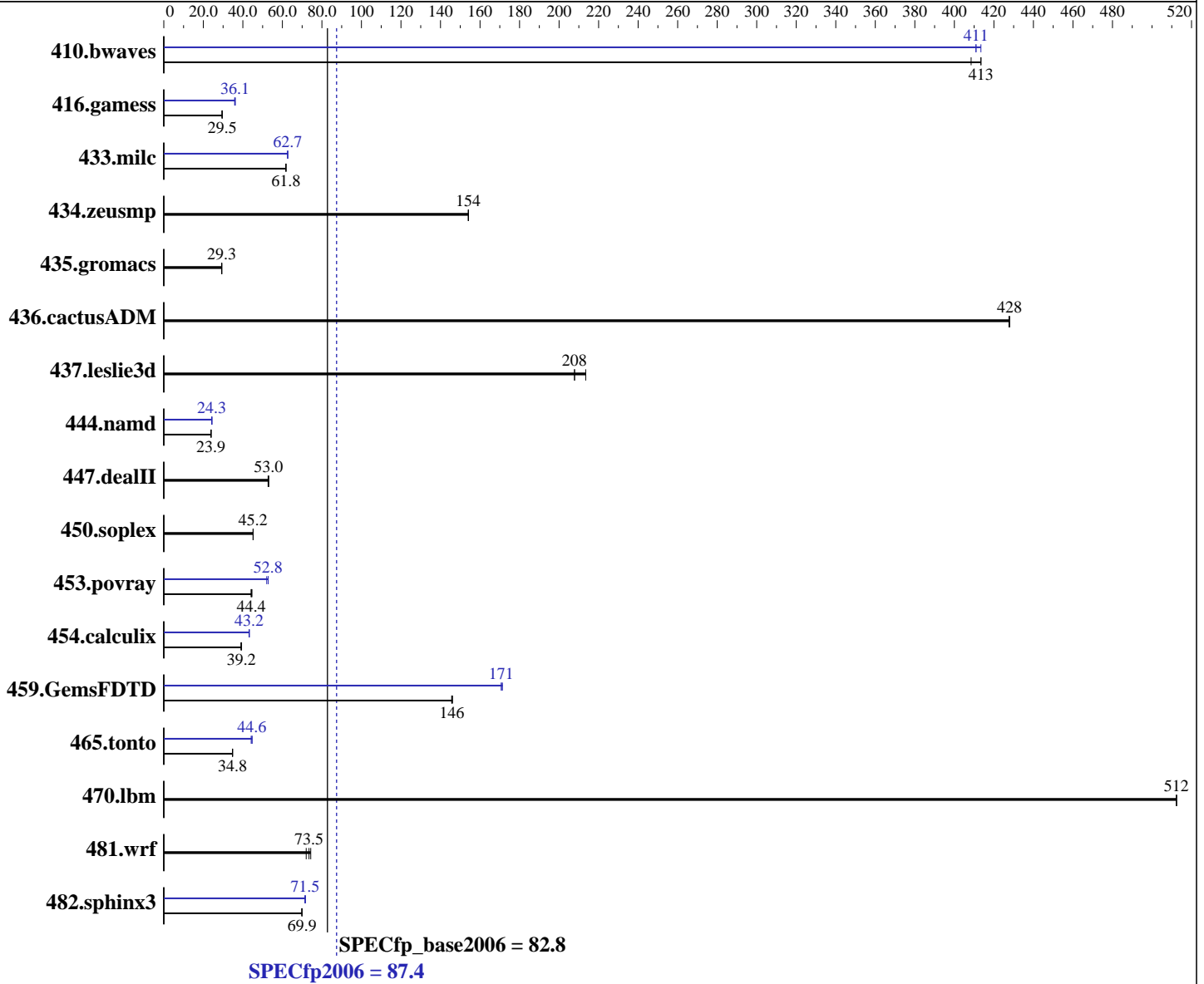
Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2680
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chip
 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 (x86_64) 3.0.13-0.9-default
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS
 Other Hardware: None

Base Pointers: 64-bit
 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	33.3	408	32.9	413	<u>32.9</u>	<u>413</u>	33.1	411	<u>33.1</u>	<u>411</u>	32.9	413
416.gamess	666	29.4	660	29.6	<u>663</u>	<u>29.5</u>	542	36.2	546	35.8	<u>543</u>	<u>36.1</u>
433.milc	149	61.8	149	61.8	<u>149</u>	<u>61.8</u>	146	62.7	<u>146</u>	<u>62.7</u>	146	62.7
434.zeusmp	59.0	154	<u>59.0</u>	<u>154</u>	59.0	154	59.0	154	<u>59.0</u>	<u>154</u>	59.0	154
435.gromacs	<u>244</u>	<u>29.3</u>	244	29.2	243	29.4	<u>244</u>	<u>29.3</u>	244	29.2	243	29.4
436.cactusADM	27.9	428	27.9	428	<u>27.9</u>	<u>428</u>	27.9	428	27.9	428	<u>27.9</u>	<u>428</u>
437.leslie3d	<u>45.2</u>	<u>208</u>	45.2	208	44.0	213	<u>45.2</u>	<u>208</u>	45.2	208	44.0	213
444.namd	335	23.9	<u>335</u>	<u>23.9</u>	336	23.9	330	24.3	330	24.3	<u>330</u>	<u>24.3</u>
447.dealII	216	53.1	217	52.8	<u>216</u>	<u>53.0</u>	216	53.1	217	52.8	<u>216</u>	<u>53.0</u>
450.soplex	185	45.2	184	45.2	<u>185</u>	<u>45.2</u>	185	45.2	184	45.2	<u>185</u>	<u>45.2</u>
453.povray	120	44.1	<u>120</u>	<u>44.4</u>	119	44.6	102	52.0	101	52.8	<u>101</u>	<u>52.8</u>
454.calculix	211	39.0	<u>210</u>	<u>39.2</u>	210	39.4	<u>191</u>	<u>43.2</u>	191	43.3	191	43.2
459.GemsFDTD	72.8	146	72.6	146	<u>72.8</u>	<u>146</u>	<u>62.1</u>	<u>171</u>	61.9	171	62.1	171
465.tonto	283	34.8	<u>283</u>	<u>34.8</u>	283	34.7	220	44.7	223	44.2	<u>221</u>	<u>44.6</u>
470.lbm	26.8	512	<u>26.8</u>	<u>512</u>	26.8	512	26.8	512	<u>26.8</u>	<u>512</u>	26.8	512
481.wrf	<u>152</u>	<u>73.5</u>	155	72.0	150	74.3	<u>152</u>	<u>73.5</u>	155	72.0	150	74.3
482.sphinx3	<u>279</u>	<u>69.9</u>	279	69.8	279	69.9	272	71.7	<u>273</u>	<u>71.5</u>	273	71.4

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

CPU Power Management set to Maximum Performance
 Memory Frequency set to Maximum Performance
 Turbo Boost set to Enabled
 C States/C1E set to Enabled
 Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on Mojo-ST Tue Feb 14 10:30:30 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2680 @ 2.70GHz
 2 "physical id"s (chips)
 32 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
  cpu cores : 8
  siblings  : 16
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

```

```

From /proc/meminfo
MemTotal:      132089864 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 2

```

```

uname -a:
Linux Mojo-ST 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012
(54ddfaf) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Feb 14 04:41 last=S

```

SPEC is set to: /root/CPU2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  132G   68G   64G  52% /

```

Additional information from dmidecode:

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

```

KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"
OMP_NUM_THREADS = "16"

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB

Continued on next page



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General Notes (Continued)

memory using RHEL5.5
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches

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.deallI: -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:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Continued on next page



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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -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: -xAVX(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

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

Continued on next page



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Peak Optimization Flags (Continued)

444.namd: -xAVX(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

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(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: -xAVX(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

465.tonto: -xAVX(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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120313.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120313.xml>



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