



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECfp®2006 = 85.1

PowerEdge M620 (Intel Xeon E5-2667, 2.90 GHz)

SPECfp_base2006 = 80.7

CPU2006 license: 55

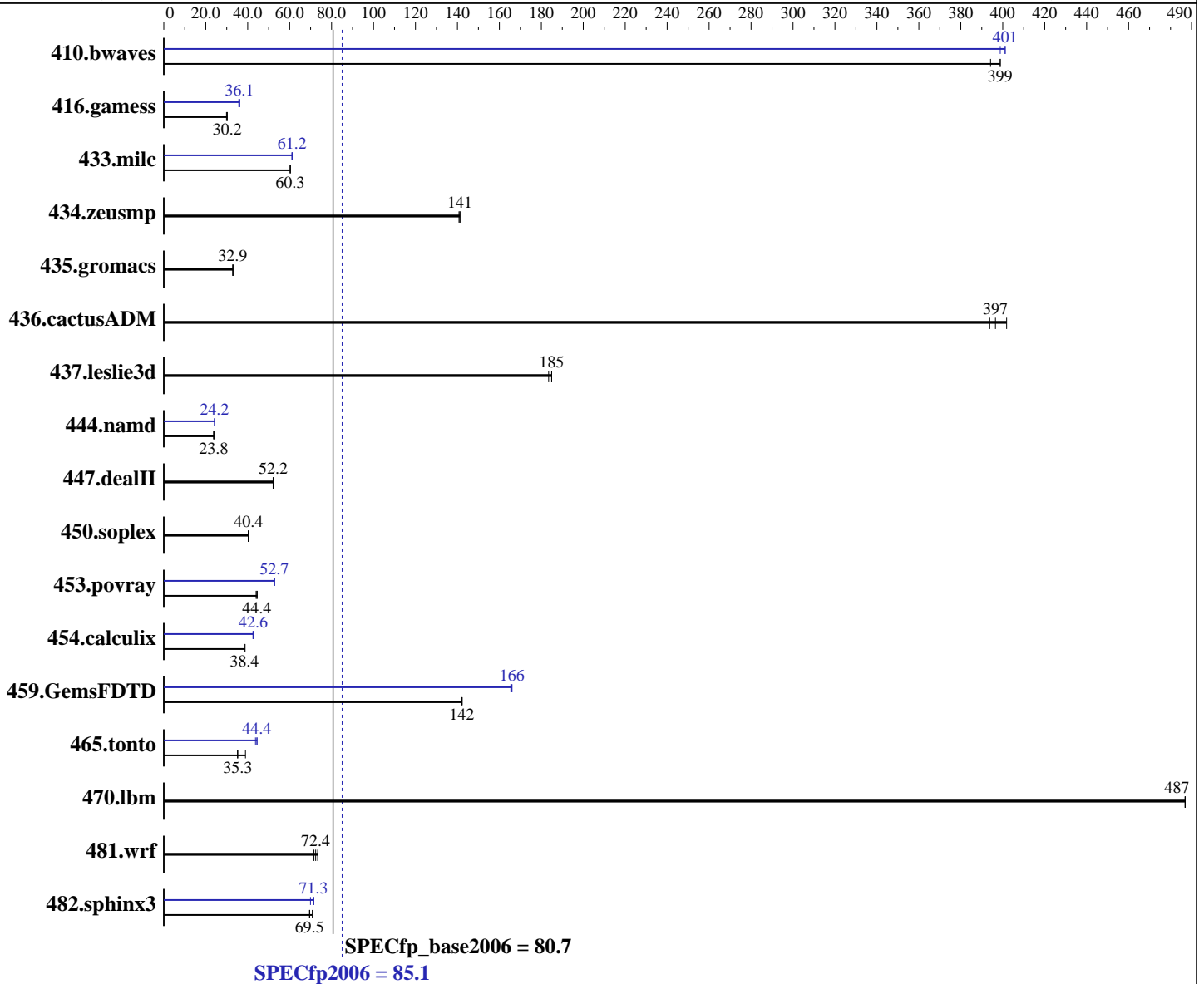
Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2667
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2900
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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

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Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (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 (add definition here)

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L3 Cache: 15 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	34.5	394	34.1	399	<u>34.1</u>	<u>399</u>	33.9	401	34.1	399	<u>33.9</u>	<u>401</u>
416.gamess	655	29.9	648	30.2	<u>648</u>	<u>30.2</u>	542	36.2	<u>542</u>	<u>36.1</u>	547	35.8
433.milc	152	60.3	<u>152</u>	<u>60.3</u>	152	60.3	150	61.2	150	61.1	<u>150</u>	<u>61.2</u>
434.zeusmp	<u>64.5</u>	<u>141</u>	64.7	141	64.5	141	<u>64.5</u>	<u>141</u>	64.7	141	64.5	141
435.gromacs	<u>217</u>	<u>32.9</u>	217	32.9	217	33.0	<u>217</u>	<u>32.9</u>	217	32.9	217	33.0
436.cactusADM	29.7	402	30.3	394	<u>30.1</u>	<u>397</u>	29.7	402	30.3	394	<u>30.1</u>	<u>397</u>
437.leslie3d	50.8	185	<u>50.8</u>	<u>185</u>	51.2	183	50.8	185	<u>50.8</u>	<u>185</u>	51.2	183
444.namd	336	23.9	<u>336</u>	<u>23.8</u>	337	23.8	331	24.2	331	24.2	<u>331</u>	<u>24.2</u>
447.dealII	219	52.2	220	52.1	<u>219</u>	<u>52.2</u>	219	52.2	220	52.1	<u>219</u>	<u>52.2</u>
450.soplex	<u>206</u>	<u>40.4</u>	206	40.4	207	40.3	<u>206</u>	<u>40.4</u>	206	40.4	207	40.3
453.povray	121	44.0	<u>120</u>	<u>44.4</u>	119	44.5	101	52.9	101	52.6	<u>101</u>	<u>52.7</u>
454.calculix	215	38.4	<u>215</u>	<u>38.4</u>	213	38.8	194	42.5	<u>193</u>	<u>42.6</u>	193	42.7
459.GemsFDTD	74.6	142	<u>74.6</u>	<u>142</u>	74.6	142	64.1	165	63.9	166	<u>63.9</u>	<u>166</u>
465.tonto	253	38.9	280	35.1	<u>279</u>	<u>35.3</u>	221	44.5	225	43.7	<u>222</u>	<u>44.4</u>
470.lbm	28.2	487	28.2	487	<u>28.2</u>	<u>487</u>	28.2	487	28.2	487	<u>28.2</u>	<u>487</u>
481.wrf	152	73.4	156	71.6	<u>154</u>	<u>72.4</u>	152	73.4	156	71.6	<u>154</u>	<u>72.4</u>
482.sphinx3	275	70.8	<u>280</u>	<u>69.5</u>	280	69.5	279	69.9	<u>273</u>	<u>71.3</u>	272	71.5

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

System Profile set to Custom
 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-SPA-01 Fri Feb 24 07:22:45 2012

This section contains SUT (System Under Test) info as seen by
Continued on next page



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Platform Notes (Continued)

some common utilities. To remove or add to this section, see:
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2667 0 @ 2.90GHz
  2 "physical id"s (chips)
  24 "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 : 6
    siblings  : 12
    physical 0: cores 0 1 2 3 4 5
    physical 1: cores 0 1 2 3 4 5
  cache size : 15360 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-SPA-01 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 24 01:12 last=S
```

```

SPEC is set to: /root/CPU2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  133G   70G   62G   53% /

```

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 = "12"

```

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General Notes (Continued)

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

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

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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:

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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.dealIII: 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.20120328.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>

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