



SPEC® CFP2006 Result

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Bull SAS

SPECfp®2006 = 82.5

NovaScale T840 F3 (Intel Xeon E5-2643, 3.30 GHz)

SPECfp_base2006 = 79.5

CPU2006 license: 20

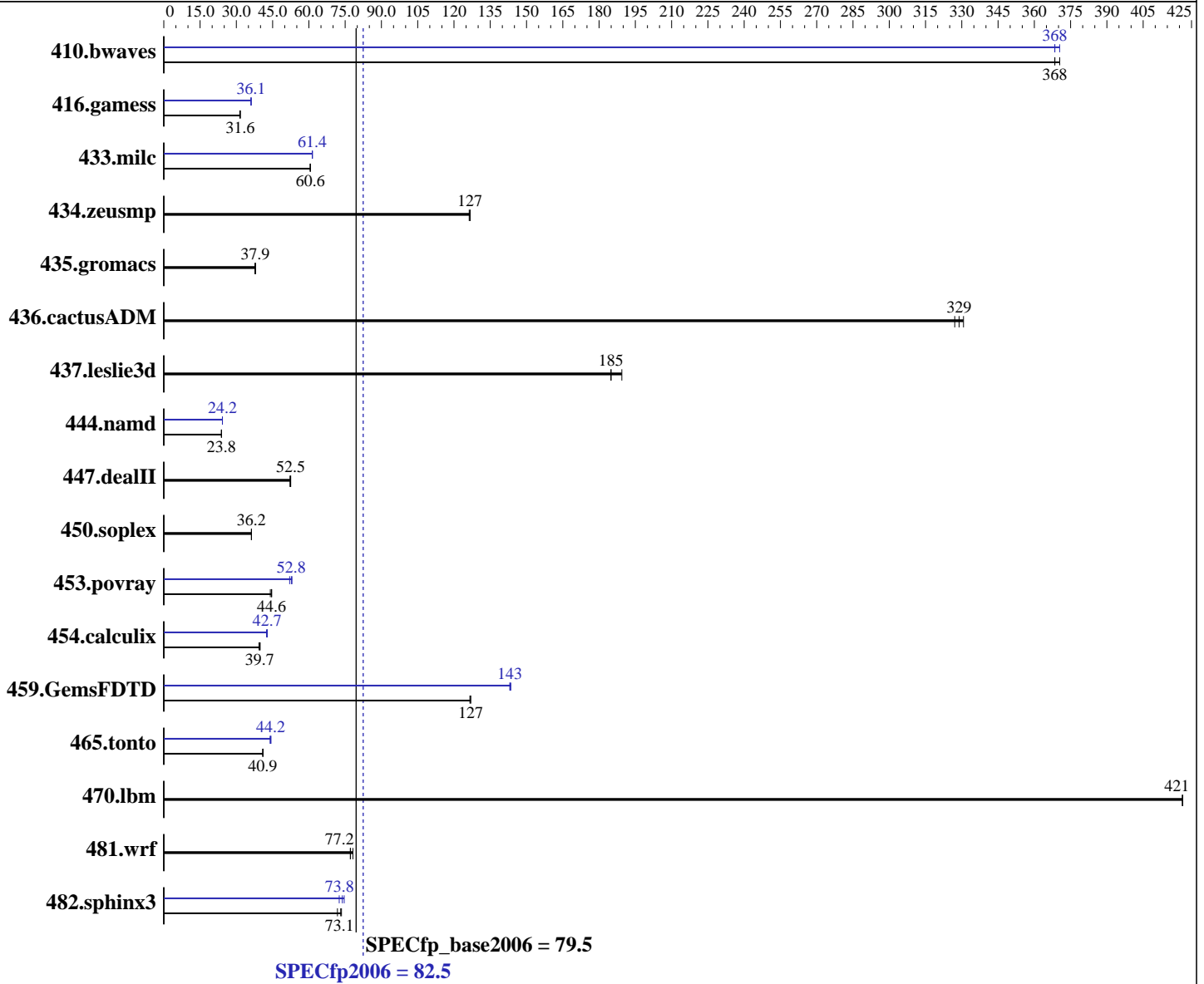
Test date: Feb-2012

Test sponsor: Bull SAS

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2643
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3300
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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 (multi-user)

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L3 Cache: 10 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 250 GB 7200 RPM SATA
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	36.7	370	36.9	368	<u>36.9</u>	<u>368</u>	36.7	370	<u>36.9</u>	<u>368</u>	36.9	368
416.gamess	<u>620</u>	<u>31.6</u>	623	31.4	619	31.7	<u>542</u>	<u>36.1</u>	542	36.2	544	36.0
433.milc	<u>151</u>	<u>60.6</u>	151	60.6	152	60.5	<u>149</u>	<u>61.4</u>	149	61.5	149	61.4
434.zeusmp	71.9	127	<u>71.9</u>	<u>127</u>	72.1	126	71.9	127	<u>71.9</u>	<u>127</u>	72.1	126
435.gromacs	188	37.9	190	37.7	<u>189</u>	<u>37.9</u>	188	37.9	190	37.7	<u>189</u>	<u>37.9</u>
436.cactusADM	36.1	331	<u>36.3</u>	<u>329</u>	36.5	327	36.1	331	<u>36.3</u>	<u>329</u>	36.5	327
437.leslie3d	49.6	189	50.8	185	<u>50.8</u>	<u>185</u>	49.6	189	50.8	185	<u>50.8</u>	<u>185</u>
444.namd	<u>336</u>	<u>23.8</u>	336	23.8	336	23.9	<u>331</u>	<u>24.2</u>	331	24.3	331	24.2
447.dealII	219	52.2	218	52.5	<u>218</u>	<u>52.5</u>	219	52.2	218	52.5	<u>218</u>	<u>52.5</u>
450.soplex	<u>230</u>	<u>36.2</u>	230	36.3	230	36.2	<u>230</u>	<u>36.2</u>	230	36.3	230	36.2
453.povray	<u>119</u>	<u>44.6</u>	119	44.6	121	44.1	<u>101</u>	<u>52.8</u>	102	52.0	100	53.0
454.calculix	207	39.8	210	39.4	<u>208</u>	<u>39.7</u>	193	42.8	194	42.5	<u>193</u>	<u>42.7</u>
459.GemsFDTD	83.6	127	<u>83.6</u>	<u>127</u>	83.8	127	<u>74.1</u>	<u>143</u>	73.9	144	74.1	143
465.tonto	240	41.0	<u>240</u>	<u>40.9</u>	241	40.9	224	43.9	<u>223</u>	<u>44.2</u>	222	44.3
470.lbm	32.6	421	<u>32.6</u>	<u>421</u>	32.6	421	32.6	421	<u>32.6</u>	<u>421</u>	32.6	421
481.wrf	145	77.1	<u>145</u>	<u>77.2</u>	143	78.2	145	77.1	<u>145</u>	<u>77.2</u>	143	78.2
482.sphinx3	271	71.8	265	73.5	<u>266</u>	<u>73.1</u>	261	74.6	<u>264</u>	<u>73.8</u>	269	72.5

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 SUT Thu Feb 16 07:05:29 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 E5-2643 0 @ 3.30GHz
    2 "physical id"s (chips)
    16 "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 : 4
    siblings  : 8
    physical 0: cores 0 1 2 3
    physical 1: cores 0 1 2 3
  cache size : 10240 KB

```

```

From /proc/meminfo
MemTotal:      132089856 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 SUT 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 16 00:57 last=S
```

```

SPEC is set to: /root/CPU2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        ext3  226G   69G  146G  32% /

```

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 = "8"
The Dell PowerEdge T620 and

```

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General Notes (Continued)

the Bull NovaScale T840 F3 models are electronically equivalent.

The results have been measured on a Dell PowerEdge T620 model

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
```

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

```
-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`

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Peak Optimization Flags (Continued)

C++ benchmarks:

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.20120328.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/Dell-Platform-Settings-V1.2-revA.20120328.xml>

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

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