



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp[®]2006 = **70.5**

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = **65.8**

CPU2006 license: 20

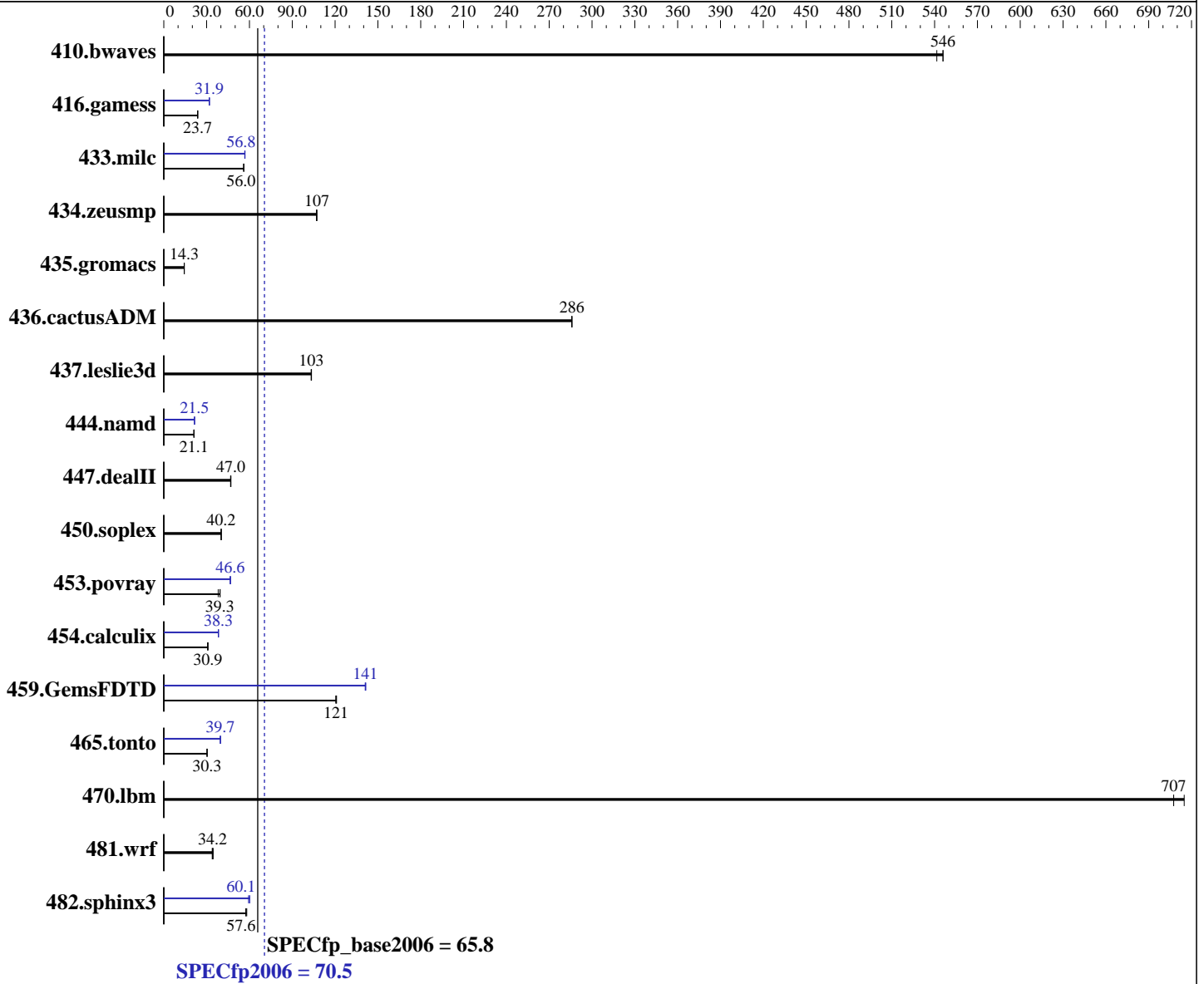
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Mar-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-4650L
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 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 SP2 (x86_64) 3.0.13-0.27-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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp2006 = **70.5**

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = **65.8**

CPU2006 license: 20

Test date: Mar-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 4 x 300 GB 10000 RPM SAS, RAID 0
 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	25.1	542	<u>24.9</u>	<u>546</u>	24.9	546	25.1	542	<u>24.9</u>	<u>546</u>	24.9	546
416.gamess	<u>826</u>	<u>23.7</u>	823	23.8	826	23.7	<u>614</u>	<u>31.9</u>	611	32.0	615	31.8
433.milc	<u>164</u>	<u>56.0</u>	164	56.1	164	56.0	161	56.9	162	56.7	<u>162</u>	<u>56.8</u>
434.zeusmp	84.9	107	<u>84.9</u>	<u>107</u>	85.1	107	84.9	107	<u>84.9</u>	<u>107</u>	85.1	107
435.gromacs	498	14.3	<u>499</u>	<u>14.3</u>	499	14.3	498	14.3	<u>499</u>	<u>14.3</u>	499	14.3
436.cactusADM	41.8	286	41.8	286	<u>41.8</u>	<u>286</u>	41.8	286	41.8	286	<u>41.8</u>	<u>286</u>
437.leslie3d	<u>90.9</u>	<u>103</u>	91.1	103	90.9	103	<u>90.9</u>	<u>103</u>	91.1	103	90.9	103
444.namd	381	21.1	379	21.2	<u>379</u>	<u>21.1</u>	<u>373</u>	<u>21.5</u>	373	21.5	373	21.5
447.dealII	244	47.0	245	46.8	<u>244</u>	<u>47.0</u>	244	47.0	245	46.8	<u>244</u>	<u>47.0</u>
450.soplex	208	40.1	207	40.3	<u>207</u>	<u>40.2</u>	208	40.1	207	40.3	<u>207</u>	<u>40.2</u>
453.povray	<u>135</u>	<u>39.3</u>	135	39.5	140	38.1	<u>114</u>	<u>46.6</u>	114	46.8	114	46.5
454.calculix	267	31.0	<u>267</u>	<u>30.9</u>	269	30.7	<u>216</u>	<u>38.3</u>	216	38.3	215	38.3
459.GemsFDTD	<u>87.9</u>	<u>121</u>	88.1	120	87.7	121	<u>75.2</u>	<u>141</u>	75.0	142	75.2	141
465.tonto	324	30.4	<u>325</u>	<u>30.3</u>	325	30.3	249	39.6	248	39.7	<u>248</u>	<u>39.7</u>
470.lbm	19.4	707	19.2	715	<u>19.4</u>	<u>707</u>	19.4	707	19.2	715	<u>19.4</u>	<u>707</u>
481.wrf	329	33.9	323	34.6	<u>327</u>	<u>34.2</u>	329	33.9	323	34.6	<u>327</u>	<u>34.2</u>
482.sphinx3	335	58.1	339	57.4	<u>338</u>	<u>57.6</u>	324	60.2	<u>325</u>	<u>60.1</u>	328	59.4

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

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 icon4p Mon Mar 5 16:20:28 2012

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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp2006 = 70.5

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = 65.8

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

Test date: Mar-2012
Hardware Availability: May-2012
Software Availability: Feb-2012

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 E5-4650L 0 @ 2.60GHz
 4 "physical id"s (chips)
 64 "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
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal: 264501512 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 icon4p 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
(d73692b) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Mar 5 09:38 last=S
```

```
SPEC is set to: /root/CPU2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext3 1.1T 123G 917G 12% /
```

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"

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp2006 = 70.5

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = 65.8

CPU2006 license: 20

Test date: Mar-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

General Notes (Continued)

OMP_NUM_THREADS = "32"

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
```

The Dell PowerEdge R820 and

the Bull NovaScale R470 F3 Models are electronically equivalent.

The results have been measured on a Dell PowerEdge R820 model.

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

```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp2006 = 70.5

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = 65.8

CPU2006 license: 20

Test date: Mar-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

Base Optimization Flags

C benchmarks:

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

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp2006 = 70.5

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = 65.8

CPU2006 license: 20

Test date: Mar-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

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.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: basepeak = yes

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.20120410.00.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.20120410.00.xml>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp2006 = 70.5

NovaScale R470 F3 (Intel Xeon E5-4650L, 2.60 GHz)

SPECfp_base2006 = 65.8

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Mar-2012

Hardware Availability: May-2012

Software Availability: Feb-2012

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 v1.2.
Report generated on Thu Jul 24 05:31:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 June 2012.