



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp[®]_rate2006 = 272

NovaScale R440 F2 (Intel Xeon X5690, 3.46 GHz)

SPECfp_rate_base2006 = 265

CPU2006 license: 20

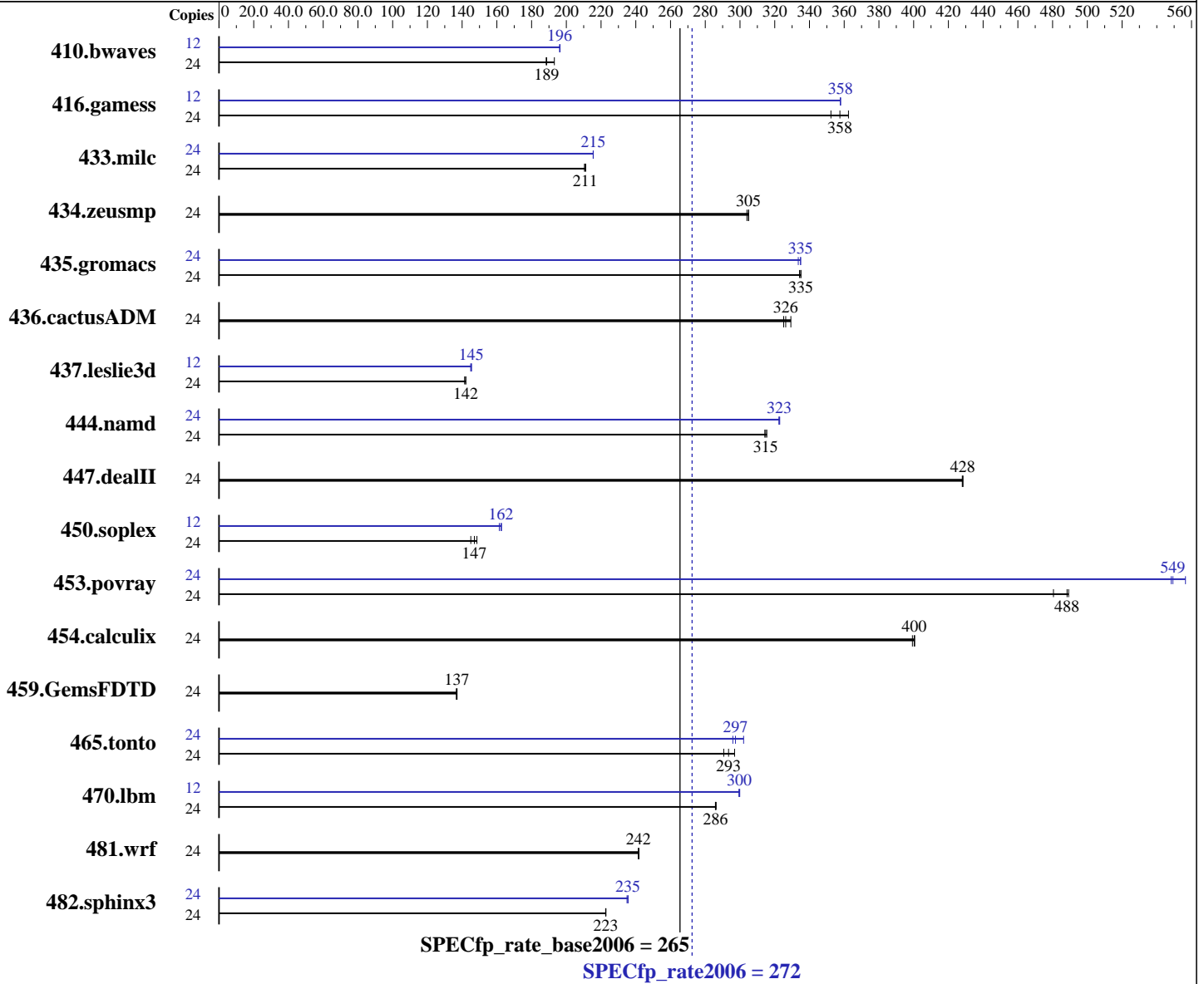
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011



Hardware

CPU Name: Intel Xeon X5690
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz
 CPU MHz: 3467
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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 12.0.1.116 Build 20101116
 Auto Parallel: No
 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

Bull SAS

SPECfp_rate2006 = 272

NovaScale R440 F2 (Intel Xeon X5690, 3.46 GHz)

SPECfp_rate_base2006 = 265

CPU2006 license: 20

Test date: Feb-2011

Test sponsor: Bull SAS

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011

L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 300 GB 15000 RPM SAS
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binaries compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1689	193	<u>1728</u>	<u>189</u>	1731	188	12	830	196	<u>831</u>	<u>196</u>	831	196
416.gamess	24	1296	362	<u>1314</u>	<u>358</u>	1334	352	12	657	358	<u>657</u>	<u>358</u>	656	358
433.milc	24	1043	211	1047	210	<u>1045</u>	<u>211</u>	24	1022	216	1023	215	<u>1022</u>	<u>215</u>
434.zeusmp	24	<u>716</u>	<u>305</u>	716	305	719	304	24	<u>716</u>	<u>305</u>	716	305	719	304
435.gromacs	24	<u>512</u>	<u>335</u>	513	334	511	335	24	514	334	<u>512</u>	<u>335</u>	512	335
436.cactusADM	24	871	329	<u>879</u>	<u>326</u>	882	325	24	871	329	<u>879</u>	<u>326</u>	882	325
437.leslie3d	24	1588	142	1595	141	<u>1588</u>	<u>142</u>	12	<u>777</u>	<u>145</u>	778	145	776	145
444.namd	24	610	315	612	314	<u>611</u>	<u>315</u>	24	<u>597</u>	<u>323</u>	596	323	597	322
447.dealII	24	641	428	<u>641</u>	<u>428</u>	642	428	24	641	428	<u>641</u>	<u>428</u>	642	428
450.soplex	24	1380	145	1348	149	<u>1361</u>	<u>147</u>	12	615	163	<u>617</u>	<u>162</u>	620	161
453.povray	24	261	489	266	481	<u>261</u>	<u>488</u>	24	233	548	229	557	<u>232</u>	<u>549</u>
454.calculix	24	494	401	<u>495</u>	<u>400</u>	496	399	24	494	401	<u>495</u>	<u>400</u>	496	399
459.GemsFDTD	24	1863	137	<u>1859</u>	<u>137</u>	1858	137	24	1863	137	<u>1859</u>	<u>137</u>	1858	137
465.tonto	24	813	291	795	297	<u>805</u>	<u>293</u>	24	798	296	<u>794</u>	<u>297</u>	782	302
470.lbm	24	1152	286	<u>1153</u>	<u>286</u>	1154	286	12	551	299	<u>550</u>	<u>300</u>	550	300
481.wrf	24	<u>1110</u>	<u>242</u>	1108	242	1110	241	24	<u>1110</u>	<u>242</u>	1108	242	1110	241
482.sphinx3	24	2101	223	<u>2100</u>	<u>223</u>	2099	223	24	1991	235	1986	236	<u>1987</u>	<u>235</u>

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

Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores

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 10800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 272

NovaScale R440 F2 (Intel Xeon X5690, 3.46 GHz)

SPECfp_rate_base2006 = 265

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

Platform Notes

BIOS Settings:

Power Management = Maximum Performance (Default = Active Power Controller)

Data Reuse = Disabled (Default = Enabled)

General Notes

The Dell PowerEdge R610 and the Bull NovaScale R440 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R610 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.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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 272

NovaScale R440 F2 (Intel Xeon X5690, 3.46 GHz)

SPECfp_rate_base2006 = 265

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

Base Optimization Flags

C benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias`

C++ benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias`

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static`

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias`

Peak Compiler Invocation

C benchmarks (except as noted below):

`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak 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`
 453.povray: `-DSPEC_CPU_LP64`
 454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
 459.GemsFDTD: `-DSPEC_CPU_LP64`
 465.tonto: `-DSPEC_CPU_LP64`

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 272

NovaScale R440 F2 (Intel Xeon X5690, 3.46 GHz)

SPECfp_rate_base2006 = 265

CPU2006 license: 20

Test date: Feb-2011

Test sponsor: Bull SAS

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011

Peak Portability Flags (Continued)

470.lbm: -DSPEC_CPU_LP64

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -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

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-ansi-alias -opt-prefetch -static -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

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

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static

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: -xSSE4.2 -ipo -O3 -no-prec-div
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 272

NovaScale R440 F2 (Intel Xeon X5690, 3.46 GHz)

SPECfp_rate_base2006 = 265

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

Peak Optimization Flags (Continued)

```
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) -unroll4 -auto
-inline-calloc -opt-malloc-options=3
-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) -opt-prefetch
-static -auto-ilp32
```

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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.20110308.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.20110308.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 16:31:26 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 16 March 2011.