



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp[®]_rate2006 = 329

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = 318

CPU2006 license: 20

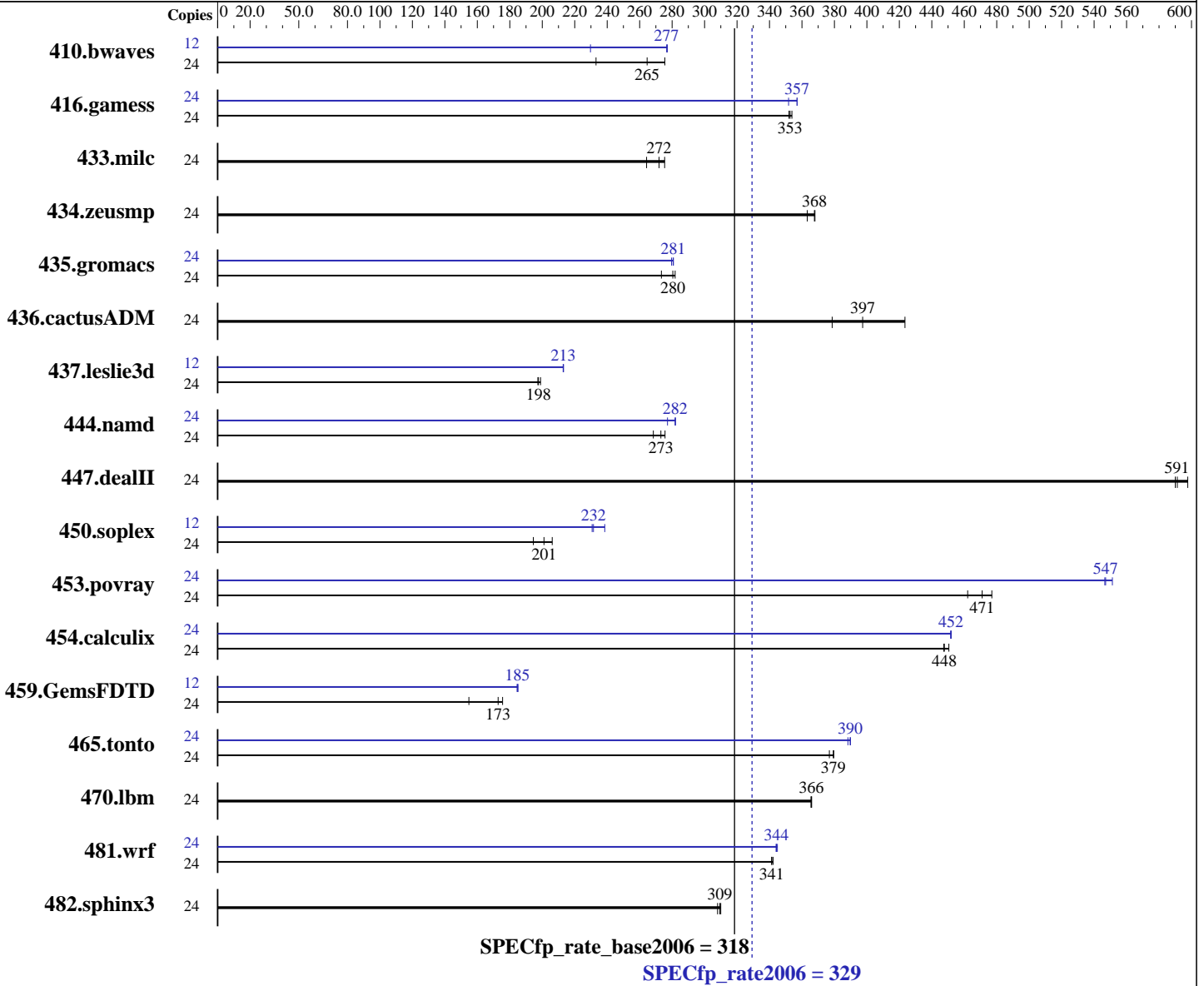
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Feb-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2440
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
 CPU MHz: 2400
 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

Continued on next page

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: No
 File System: ext3
 System State: Run level 3 (add definition here)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = **329**

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = **318**

CPU2006 license: 20

Test date: Feb-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

L3 Cache: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
 Disk Subsystem: 2 x 300 GB 15000 RPM SAS, RAID 1
 Other Hardware: None

Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	24	1184	276	<u>1233</u>	<u>265</u>	1399	233	12	589	277	710	230	<u>590</u>	<u>277</u>		
416.gamess	24	<u>1332</u>	<u>353</u>	1328	354	1335	352	24	1316	357	<u>1316</u>	<u>357</u>	1336	352		
433.milc	24	800	275	<u>810</u>	<u>272</u>	834	264	24	800	275	<u>810</u>	<u>272</u>	834	264		
434.zeusmp	24	<u>594</u>	<u>368</u>	593	368	601	363	24	<u>594</u>	<u>368</u>	593	368	601	363		
435.gromacs	24	608	282	627	273	<u>611</u>	<u>280</u>	24	613	280	<u>611</u>	<u>281</u>	610	281		
436.cactusADM	24	677	423	<u>722</u>	<u>397</u>	758	379	24	677	423	<u>722</u>	<u>397</u>	758	379		
437.leslie3d	24	1134	199	<u>1141</u>	<u>198</u>	1143	197	12	529	213	<u>530</u>	<u>213</u>	530	213		
444.namd	24	698	276	717	268	<u>705</u>	<u>273</u>	24	694	277	<u>683</u>	<u>282</u>	682	282		
447.dealII	24	459	598	465	590	<u>464</u>	<u>591</u>	24	459	598	465	590	<u>464</u>	<u>591</u>		
450.soplex	24	1029	194	<u>995</u>	<u>201</u>	971	206	12	434	231	<u>432</u>	<u>232</u>	420	239		
453.povray	24	<u>271</u>	<u>471</u>	276	462	268	477	24	234	547	232	551	<u>233</u>	<u>547</u>		
454.calculix	24	<u>442</u>	<u>448</u>	440	451	443	447	24	438	452	<u>438</u>	<u>452</u>	438	452		
459.GemsFDTD	24	<u>1473</u>	<u>173</u>	1645	155	1450	176	12	<u>689</u>	<u>185</u>	690	184	688	185		
465.tonto	24	627	377	622	380	<u>623</u>	<u>379</u>	24	<u>606</u>	<u>390</u>	608	388	606	390		
470.lbm	24	<u>901</u>	<u>366</u>	901	366	902	366	24	<u>901</u>	<u>366</u>	901	366	902	366		
481.wrf	24	<u>785</u>	<u>341</u>	785	341	783	342	24	777	345	<u>779</u>	<u>344</u>	779	344		
482.sphinx3	24	<u>1512</u>	<u>309</u>	1519	308	1509	310	24	<u>1512</u>	<u>309</u>	1519	308	1509	310		

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 329

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = 318

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

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

Platform Notes (Continued)

C States/C1E set to Enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3
running on Slik Sun Feb 26 06:07:21 2012

This section contains SUT (System Under Test) info as seen by 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 E5-2440 0 @ 2.40GHz
 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: 49381468 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 Slik 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 25 17:04 last=S
```

```
SPEC is set to: /root/CPU2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdal ext3 266G 32G 221G 13% /
```

Additional information from dmidecode:

(End of data from sysinfo program)



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 329

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = 318

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

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

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
The Dell PowerEdge R420 and the Bull NovaScale R430 F3 models are electronically equivalent.
The results have been measured on a Dell PowerEdge R420 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.lelie3d: -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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 329

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = 318

CPU2006 license: 20

Test date: Feb-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

Base Portability Flags (Continued)

482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 329

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = 318

CPU2006 license: 20

Test date: Feb-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

Peak Portability Flags (Continued)

```

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
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

```

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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: -xAVX(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

```

```

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

SPECfp_rate2006 = 329

NovaScale R430 F3 (Intel Xeon E5-2440, 2.40 GHz)

SPECfp_rate_base2006 = 318

CPU2006 license: 20

Test date: Feb-2012

Test sponsor: Bull SAS

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

Peak Optimization Flags (Continued)

459.GemsFDTD: -xAVX(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

465.tonto: -xAVX(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

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(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 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

481.wrf: Same as 454.calculix

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 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 05:33:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 June 2012.