



SPEC® CFP2006 Result

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Bull SAS

SPECfp®_rate2006 = 485

BL275+ (Intel Xeon E5-2670, 2.60 GHz)

SPECfp_rate_base2006 = 471

CPU2006 license: 20

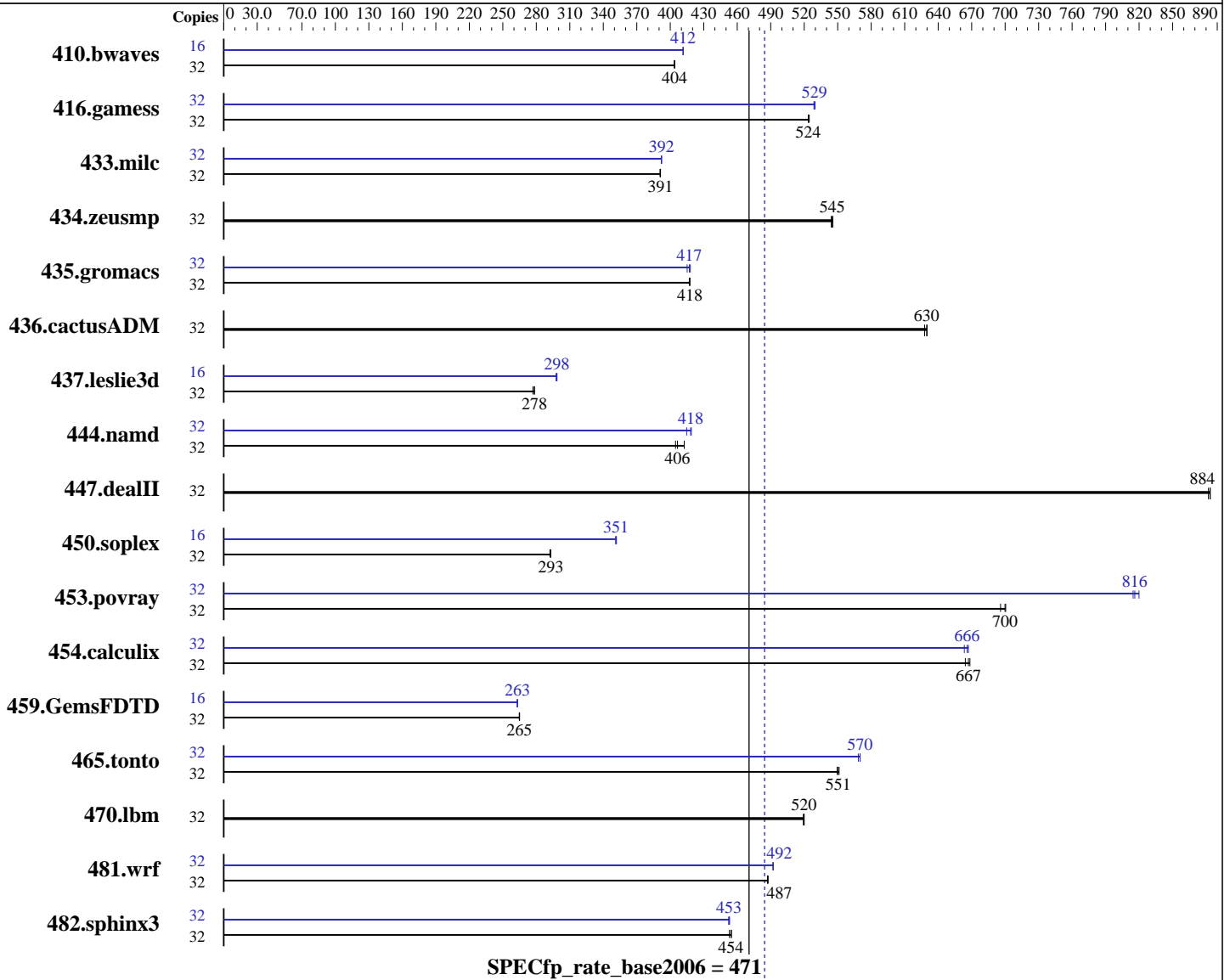
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Oct-2012

Hardware Availability: Jul-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2670
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 2.6.32-220.el6.x86_64
 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: ext4

Continued on next page



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L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 2 x 146 GB 15000 RPM SAS, RAID 0
Other Hardware: None

System State: Run level 3 (multi-user)
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	32	1076	404	1078	404	1077	404	16	528	412	528	411	528	412
416.gamess	32	1195	525	1196	524	1196	524	32	1185	529	1184	529	1183	530
433.milc	32	751	391	751	391	752	391	32	749	392	749	392	749	392
434.zeusmp	32	534	545	535	544	534	546	32	534	545	535	544	534	546
435.gromacs	32	547	418	547	418	548	417	32	547	418	548	417	550	415
436.cactusADM	32	607	630	609	628	607	630	32	607	630	609	628	607	630
437.leslie3d	32	1081	278	1086	277	1081	278	16	505	298	504	299	504	298
444.namd	32	631	406	622	413	634	405	32	614	418	613	419	619	415
447.dealII	32	415	882	414	884	414	884	32	415	882	414	884	414	884
450.soplex	32	911	293	911	293	913	292	16	380	351	380	351	379	352
453.povray	32	245	696	243	700	243	700	32	209	815	208	820	209	816
454.calculix	32	397	664	395	668	396	667	32	398	663	396	666	396	667
459.GemsFDTD	32	1281	265	1281	265	1283	265	16	646	263	645	263	645	263
465.tonto	32	572	551	571	551	573	549	32	552	570	552	570	554	568
470.lbm	32	846	520	846	520	847	519	32	846	520	846	520	847	519
481.wrf	32	734	487	733	488	734	487	32	726	492	726	492	726	492
482.sphinx3	32	1377	453	1371	455	1372	454	32	1376	453	1379	452	1378	453

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

Sysinfo program /spec/cpu2006.1.2/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Fri Oct 19 22:20:21 2012

Continued on next page



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Platform Notes (Continued)

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 E5-2670 0 @ 2.60GHz
 2 "physical id"s (chips)
 32 "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
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      132271784 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
EST 2011 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Oct 19 22:19
```

```
SPEC is set to: /spec/cpu2006.1.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_root
                ext4      172G  77G   86G  48% /
```

```
Additional information from dmidecode:
Memory:
16x Samsung M392B1K70DM0-CK0 8 GB 1600 MHz 2 rank
```

(End of data from sysinfo program)



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General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/cpu2006.1.2/libs/32:/spec/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/redhat_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>

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



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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 (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.deallI: -DSPEC_CPU_LP64  
453.povray: -DSPEC_CPU_LP64
```

Continued on next page



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Peak Portability Flags (Continued)

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

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
 -opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

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: -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

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

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Peak Optimization Flags (Continued)

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/Bull-Platform-Settings-V1.2.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/Bull-Platform-Settings-V1.2.xml>

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Page 7