



SPEC® CFP2006 Result

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Bull SAS

NovaScale R460
(Intel Xeon processor E5320,1.86GHz)

SPECfp®_rate2006 = 44.1

SPECfp_rate_base2006 = 43.6

CPU2006 license: 20

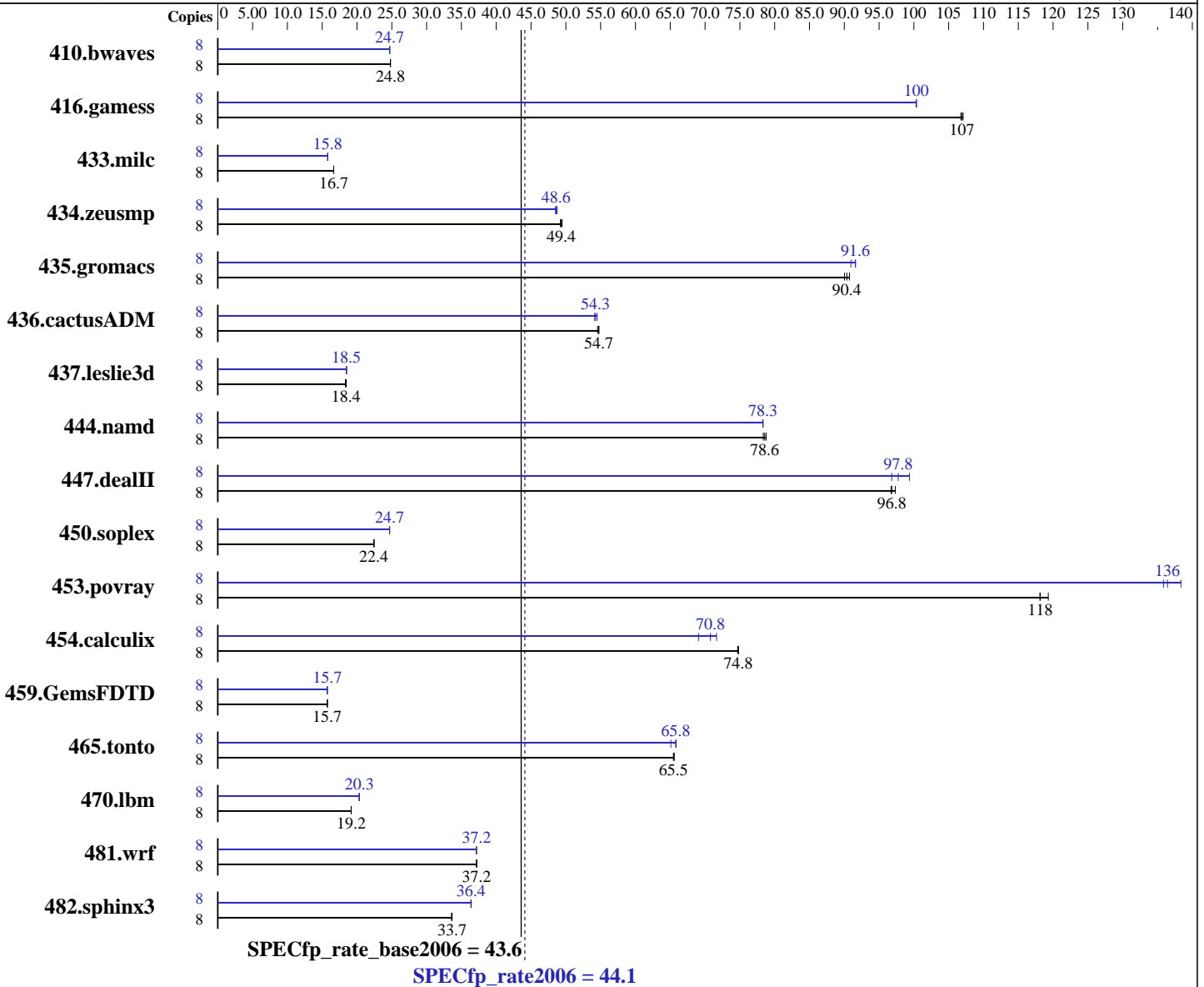
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Aug-2007

Hardware Availability: Mar-2007

Software Availability: May-2007



Hardware

CPU Name: Intel Xeon E5320
 CPU Characteristics: 1.86 GHz, 8 MB L2, 1066 MHz system bus
 CPU MHz: 1866
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1 to 2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System: SUSE LINUX Enterprise Server 10
 Kernel 2.6.16.21-0.8-smp for x86_64
 Compiler: Intel C++ Compiler for IA32/EM64T application version 10.0
 Build 20070426 Package ID: l_cc_p_10.0.023
 Intel Fortran Compiler for IA32/EM64T application version 10.0
 Build 20070426 Package ID: l_fc_p_10.0.023
 Auto Parallel: No
 File System: ext2

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L3 Cache: None
Other Cache: None
Memory: 12 GB (12x1 GB) FB-DIMM PC2-4200F ECC CL4
Disk Subsystem: 1x73 GB SAS, 15000 RPM
Other Hardware: None

System State: Multi-user run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	4383	24.8	4384	24.8	4384	24.8	8	4403	24.7	4403	24.7	4401	24.7
416.gamess	8	1467	107	1463	107	1465	107	8	1562	100	1561	100	1561	100
433.milc	8	4409	16.7	4409	16.7	4411	16.6	8	4652	15.8	4650	15.8	4649	15.8
434.zeusmp	8	1475	49.4	1479	49.2	1472	49.5	8	1498	48.6	1500	48.5	1494	48.7
435.gromacs	8	634	90.0	629	90.7	632	90.4	8	624	91.6	624	91.6	628	91.0
436.cactusADM	8	1747	54.7	1746	54.8	1752	54.6	8	1754	54.5	1766	54.1	1762	54.3
437.leslie3d	8	4102	18.3	4085	18.4	4073	18.5	8	4071	18.5	4071	18.5	4063	18.5
444.namd	8	814	78.8	819	78.4	817	78.6	8	819	78.3	820	78.3	819	78.3
447.dealII	8	945	96.8	946	96.7	940	97.3	8	945	96.8	921	99.4	936	97.8
450.soplex	8	2971	22.5	2976	22.4	2974	22.4	8	2703	24.7	2704	24.7	2702	24.7
453.povray	8	360	118	357	119	360	118	8	312	136	308	138	313	136
454.calculix	8	883	74.8	882	74.8	884	74.7	8	933	70.8	921	71.7	956	69.1
459.GemsFDTD	8	5401	15.7	5390	15.7	5395	15.7	8	5404	15.7	5394	15.7	5390	15.7
465.tonto	8	1200	65.6	1203	65.5	1202	65.5	8	1209	65.1	1197	65.8	1196	65.8
470.lbm	8	5737	19.2	5733	19.2	5733	19.2	8	5410	20.3	5406	20.3	5406	20.3
481.wrf	8	2403	37.2	2405	37.2	2404	37.2	8	2407	37.1	2404	37.2	2404	37.2
482.sphinx3	8	4644	33.6	4632	33.7	4633	33.7	8	4287	36.4	4286	36.4	4282	36.4

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs

General Notes

All binaries were built with 64-bit Intel compiler except:
433.milc, 434.zeusmp, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with
32-bit Intel compiler by changing the path for include and library files.

The NovaScale R440 and the NovaScale R460 models are
electronically equivalent.
The results have been measured on a NovaScale R460 model.



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Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

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:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast



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Peak Compiler Invocation

C benchmarks:

```
/opt/intel/cc/10.0.023/bin/icc -L/opt/intel/cc/10.0.023/lib  
-I/opt/intel/cc/10.0.023/include
```

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.0.023/bin/icpc -L/opt/intel/cc/10.0.023/lib  
-I/opt/intel/cc/10.0.023/include
```

Fortran benchmarks (except as noted below):

ifort

```
434.zeusmp: /opt/intel/fc/10.0.023/bin/ifort -L/opt/intel/fc/10.0.023/lib  
-I/opt/intel/fc/10.0.023/include
```

Benchmarks using both Fortran and C:

icc ifort

Peak Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64  
416.gamess: -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  
454.calculix: -DSPEC_CPU_LP64 -nofor_main  
459.GemsFDTD: -DSPEC_CPU_LP64  
465.tonto: -DSPEC_CPU_LP64  
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32
```

```
470.lbm: Same as 433.milc
```

```
482.sphinx3: -fast -auto_ilp32
```

C++ benchmarks:

```
-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32
```

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -prof_gen(pass 1) -prof_use(pass 2) -fast

416.gamess: Same as 410.bwaves

434.zeusmp: -fast

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: Same as 410.bwaves

Benchmarks using both Fortran and C:

-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.xml

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

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 14:02:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 October 2007.