



SPEC[®] CFP2006 Result

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Bull SAS

NovaScale R460
(Intel Xeon processor E5335, 2.00GHz)

SPECfp[®]_rate2006 = 52.1

SPECfp_rate_base2006 = 51.4

CPU2006 license: 20

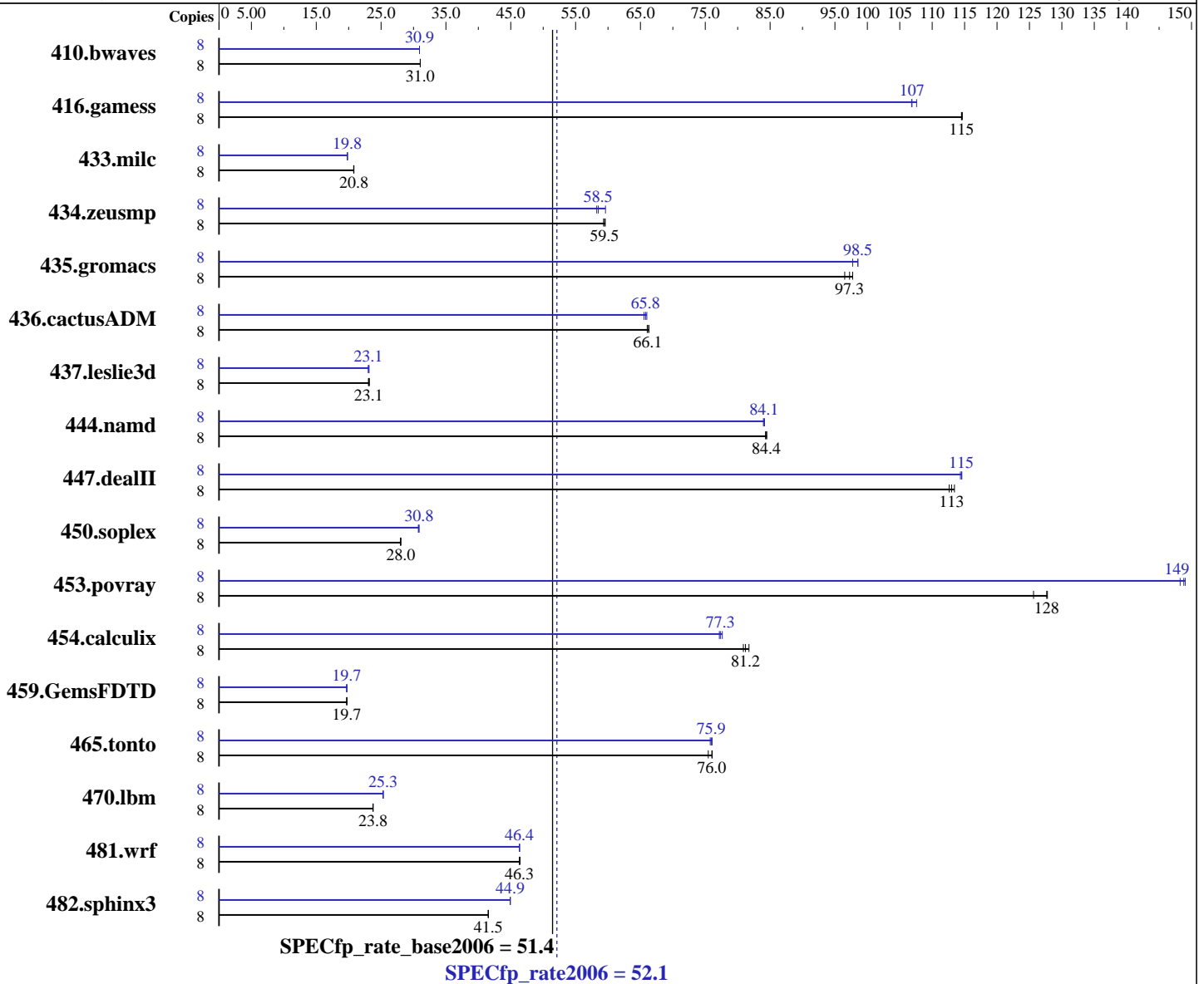
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Aug-2007

Hardware Availability: Mar-2007

Software Availability: May-2007



Hardware

CPU Name: Intel Xeon E5335
 CPU Characteristics: 2.00 GHz, 8 MB L2, 1333 MHz system bus
 CPU MHz: 2000
 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: 16 GB (8x2 GB) FB-DIMM PC2-5300F ECC CL5
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	3502	31.0	3502	31.0	3502	31.0	8	3516	30.9	3516	30.9	3516	30.9
416.gamess	8	1368	115	1368	115	1366	115	8	1456	108	1466	107	1465	107
433.milc	8	3531	20.8	3530	20.8	3536	20.8	8	3709	19.8	3706	19.8	3710	19.8
434.zeusmp	8	1227	59.3	1222	59.6	1224	59.5	8	1250	58.3	1221	59.6	1245	58.5
435.gromacs	8	584	97.7	592	96.5	587	97.3	8	580	98.5	584	97.7	580	98.5
436.cactusADM	8	1447	66.0	1446	66.1	1441	66.3	8	1449	66.0	1453	65.8	1458	65.6
437.leslie3d	8	3257	23.1	3262	23.1	3241	23.2	8	3262	23.1	3265	23.0	3249	23.1
444.namd	8	760	84.4	761	84.3	759	84.5	8	763	84.1	763	84.1	764	84.0
447.dealII	8	810	113	807	113	813	113	8	800	114	799	115	799	115
450.soplex	8	2381	28.0	2379	28.0	2383	28.0	8	2170	30.7	2163	30.8	2163	30.8
453.povray	8	339	126	333	128	333	128	8	287	148	286	149	286	149
454.calculix	8	816	80.9	807	81.7	813	81.2	8	850	77.6	855	77.2	853	77.3
459.GemsFDTD	8	4306	19.7	4306	19.7	4306	19.7	8	4312	19.7	4302	19.7	4307	19.7
465.tonto	8	1036	76.0	1043	75.5	1035	76.1	8	1037	75.9	1039	75.8	1035	76.1
470.lbm	8	4626	23.8	4629	23.7	4624	23.8	8	4341	25.3	4341	25.3	4341	25.3
481.wrf	8	1924	46.4	1929	46.3	1929	46.3	8	1928	46.4	1928	46.4	1929	46.3
482.sphinx3	8	3754	41.5	3753	41.5	3754	41.5	8	3471	44.9	3471	44.9	3470	44.9

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.lelie3d: 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.

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