SPEC® CFP2006 Result

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Bull SAS

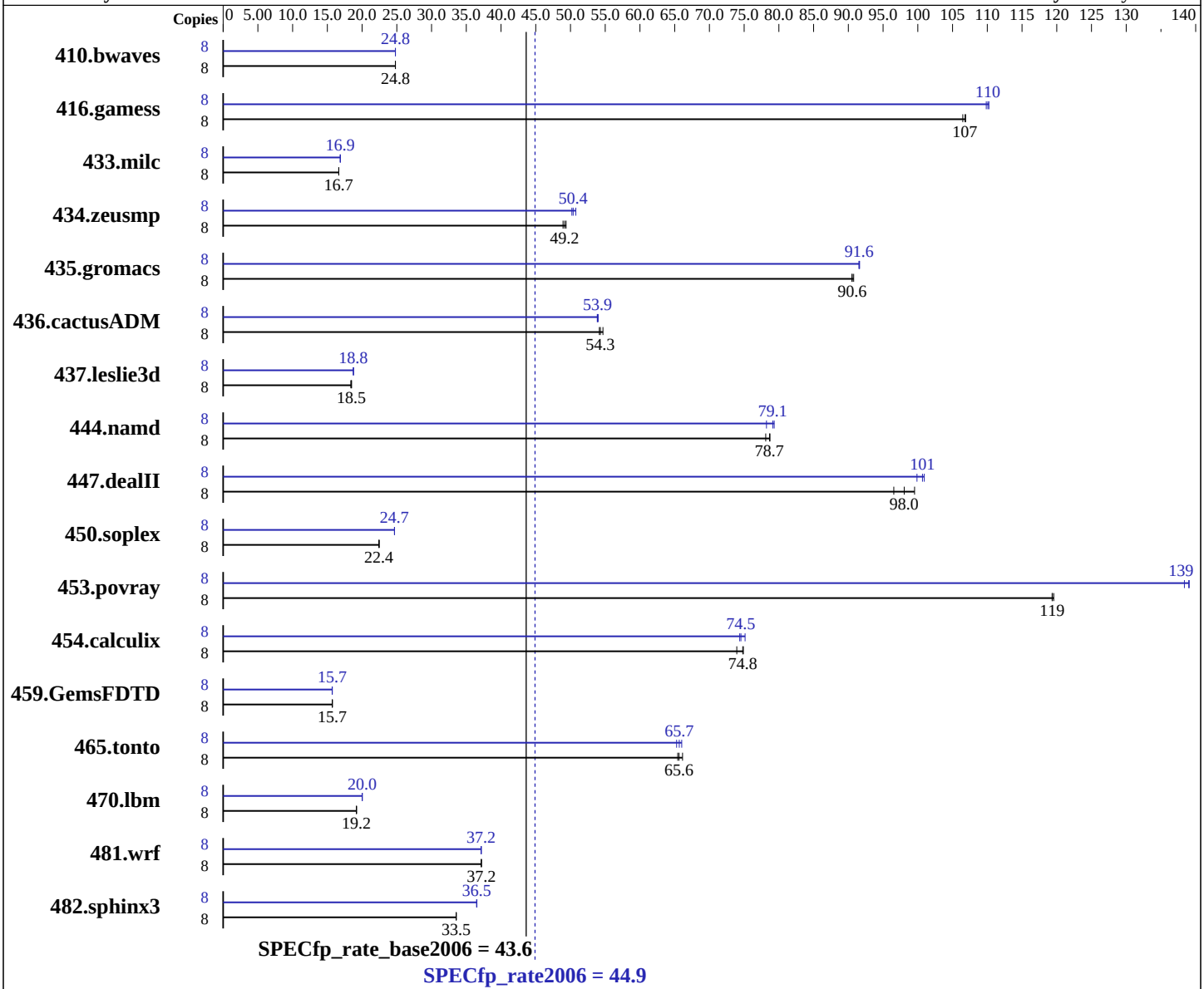
NovaScale T860
(Intel Xeon processor E5320,1.86GHz)

SPECfp®_rate2006 = 44.9

SPECfp_rate_base2006 = 43.6

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS

Test date: Jul-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:	1860
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: 1x147 GB SAS, 15000 RPM
Other Hardware: None

System State: Multi-user run level 3
Base Pointers: 32-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	4386	24.8	4384	24.8	**4385**	**24.8**	8	4385	24.8	4384	24.8	**4385**	**24.8**
416.gamess	8	**1467**	**107**	1466	107	1471	106	8	1426	110	**1423**	**110**	1421	110
433.milc	8	4415	16.6	**4410**	**16.7**	4410	16.7	8	**4355**	**16.9**	4355	16.9	4354	16.9
434.zeusmp	8	**1481**	**49.2**	1475	49.4	1488	48.9	8	**1445**	**50.4**	1434	50.8	1450	50.2
435.gromacs	8	**631**	**90.6**	629	90.8	631	90.5	8	**624**	**91.6**	624	91.5	623	91.6
436.cactusADM	8	**1761**	**54.3**	1765	54.2	1749	54.7	8	**1774**	**53.9**	1775	53.9	1771	54.0
437.leslie3d	8	4070	18.5	**4072**	**18.5**	4092	18.4	8	4008	18.8	4014	18.7	**4010**	**18.8**
444.namd	8	815	78.7	**816**	**78.7**	821	78.1	8	809	79.3	**811**	**79.1**	820	78.2
447.dealII	8	919	99.5	**933**	**98.0**	948	96.5	8	907	101	916	99.9	**909**	**101**
450.soplex	8	2976	22.4	**2974**	**22.4**	2970	22.5	8	2704	24.7	**2705**	**24.7**	2706	24.7
453.povray	8	**357**	**119**	357	119	356	120	8	308	138	**306**	**139**	306	139
454.calculix	8	893	73.9	**882**	**74.8**	881	74.9	8	878	75.1	**885**	**74.5**	888	74.4
459.GemsFDTD	8	5398	15.7	**5404**	**15.7**	5404	15.7	8	5402	15.7	5410	15.7	**5405**	**15.7**
465.tonto	8	1190	66.1	1203	65.4	**1199**	**65.6**	8	1206	65.3	1192	66.0	**1199**	**65.7**
470.lbm	8	**5728**	**19.2**	5728	19.2	5728	19.2	8	5491	20.0	5490	20.0	**5491**	**20.0**
481.wrf	8	**2404**	**37.2**	2404	37.2	2405	37.2	8	**2405**	**37.2**	2408	37.1	2405	37.2
482.sphinx3	8	4649	33.5	4646	33.6	**4648**	**33.5**	8	**4271**	**36.5**	4268	36.5	4273	36.5

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:
437.leslie3d, 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.
```

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

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.0.023/bin/icc -L/opt/intel/cc/10.0.023/lib -I/opt/intel/cc/10.0.023/include`

433.milc: `icc`

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`

437.leslie3d: `/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

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

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

470.lbm: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch`

482.sphinx3: `-fast -unroll2`

C++ benchmarks:

444.namd: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -fno-alias -auto_ilp32`

447.dealII: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -xT -ipo -O3 -no-prec-div`

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Peak Optimization Flags (Continued)

453.povray: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-fast`

416.gamess: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast`

437.leslie3d: `Same as 434.zeusmp`

459.GemsFDTD: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -Ob0`

465.tonto: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll4`

Benchmarks using both Fortran and C:

435.gromacs: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -auto_ilp32`

436.cactusADM: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -unroll2 -auto_ilp32`

454.calculix: `-fast -auto_ilp32`

481.wrf: `Same as 454.calculix`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.00.xml`

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