SPEC® CFP2006 Result

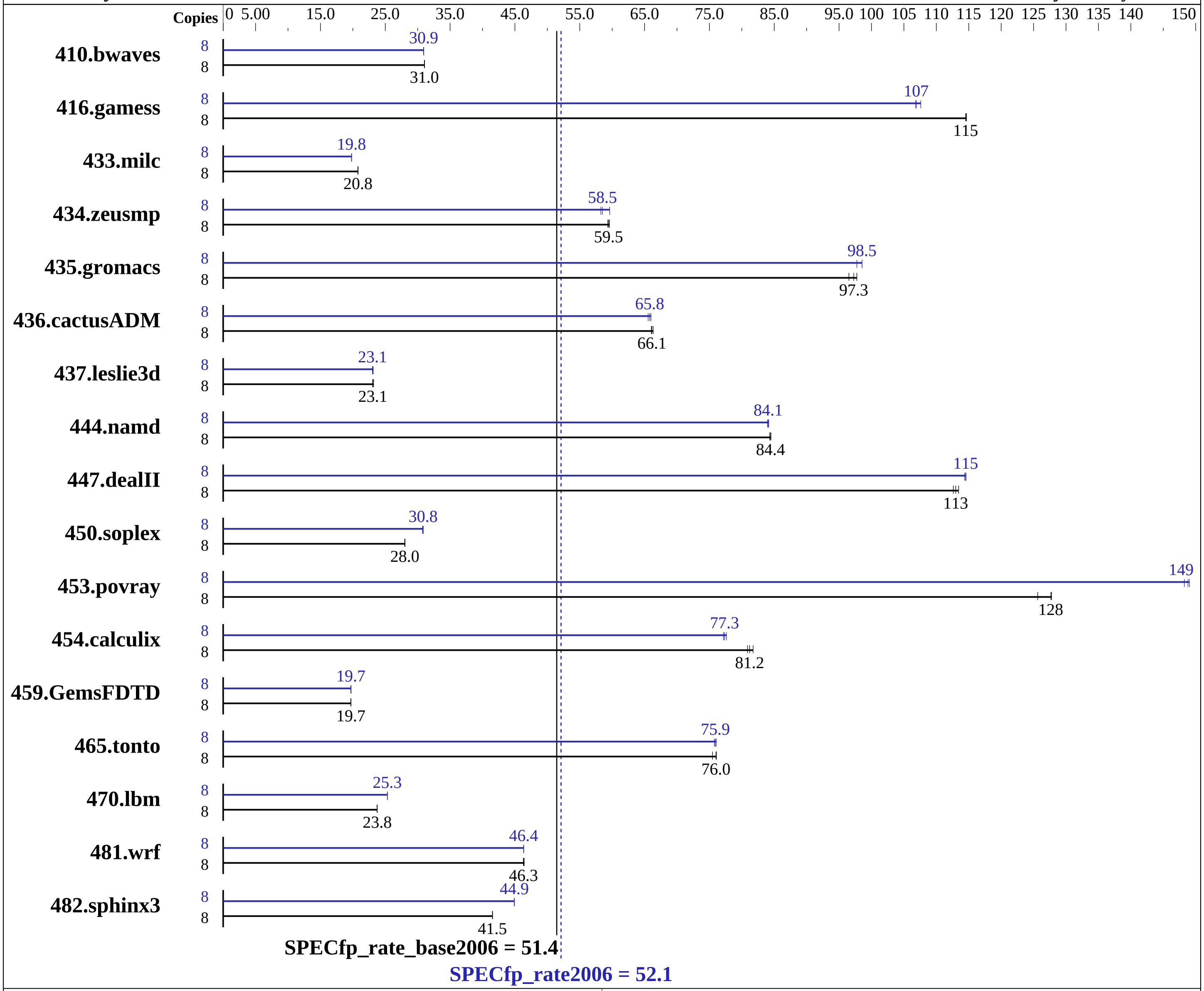
Bull SAS

NovaScale R460
(Intel Xeon processor E5335, 2.00GHz)

SPECfp®_rate2006 = 52.1

SPECfp_rate_base2006 = 51.4

CPU2006 license:	20	**Test date:**	Aug-2007
Test sponsor:	Bull SAS	**Hardware Availability:**	Mar-2007
Tested by:	Bull SAS	**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

	Base							Peak						
Benchmark	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.
```

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:
```
/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.dealII: -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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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