SPEC® CFP2006 Result

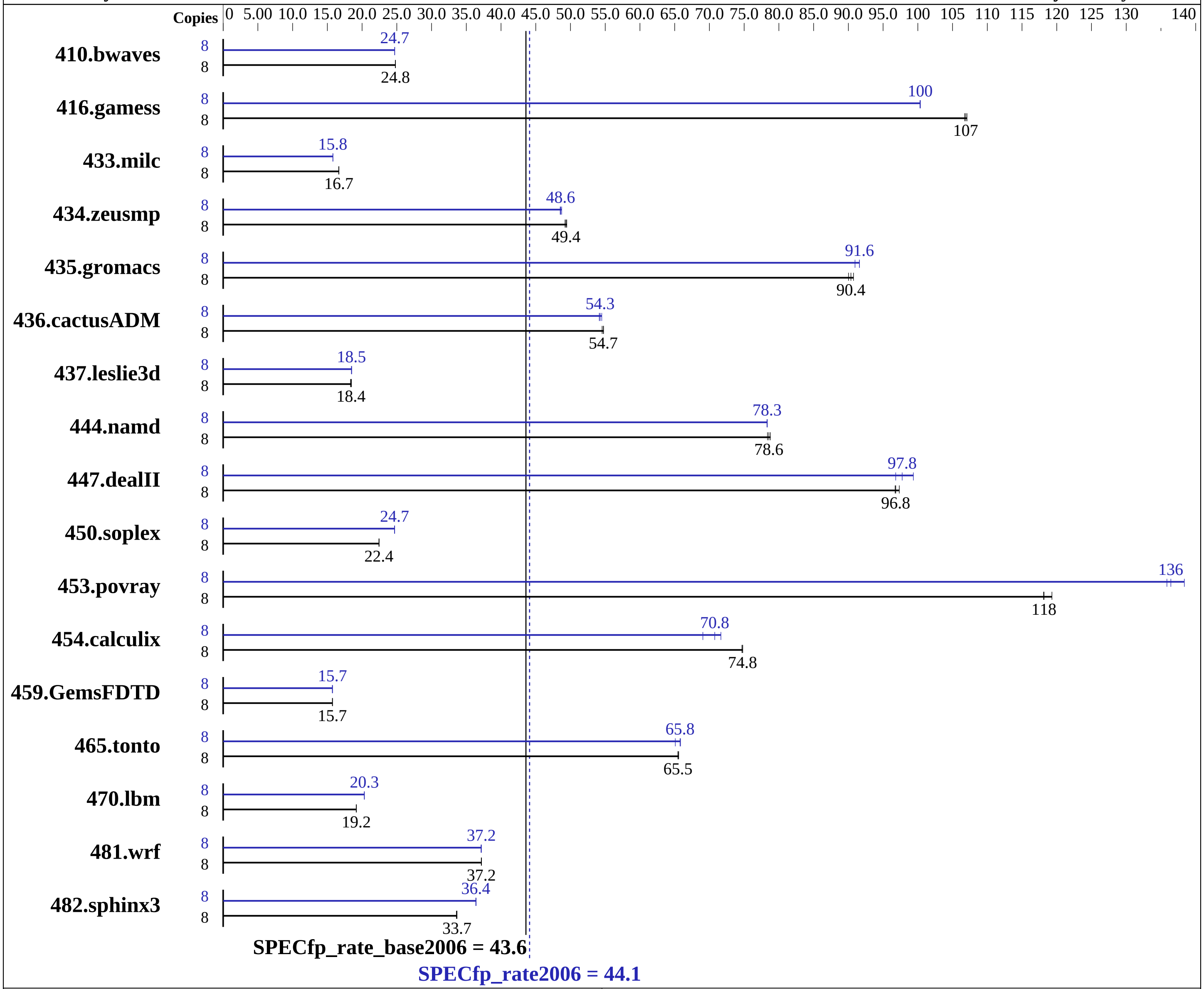
Bull SAS

NovaScale R440
(Intel Xeon processor E5320,1.86GHz)

SPECfp®_rate2006 = 44.1

SPECfp_rate_base2006 = 43.6

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 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

	Base							Peak						
Benchmark	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.
```

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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