SPEC® CFP2006 Result

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Bull SAS

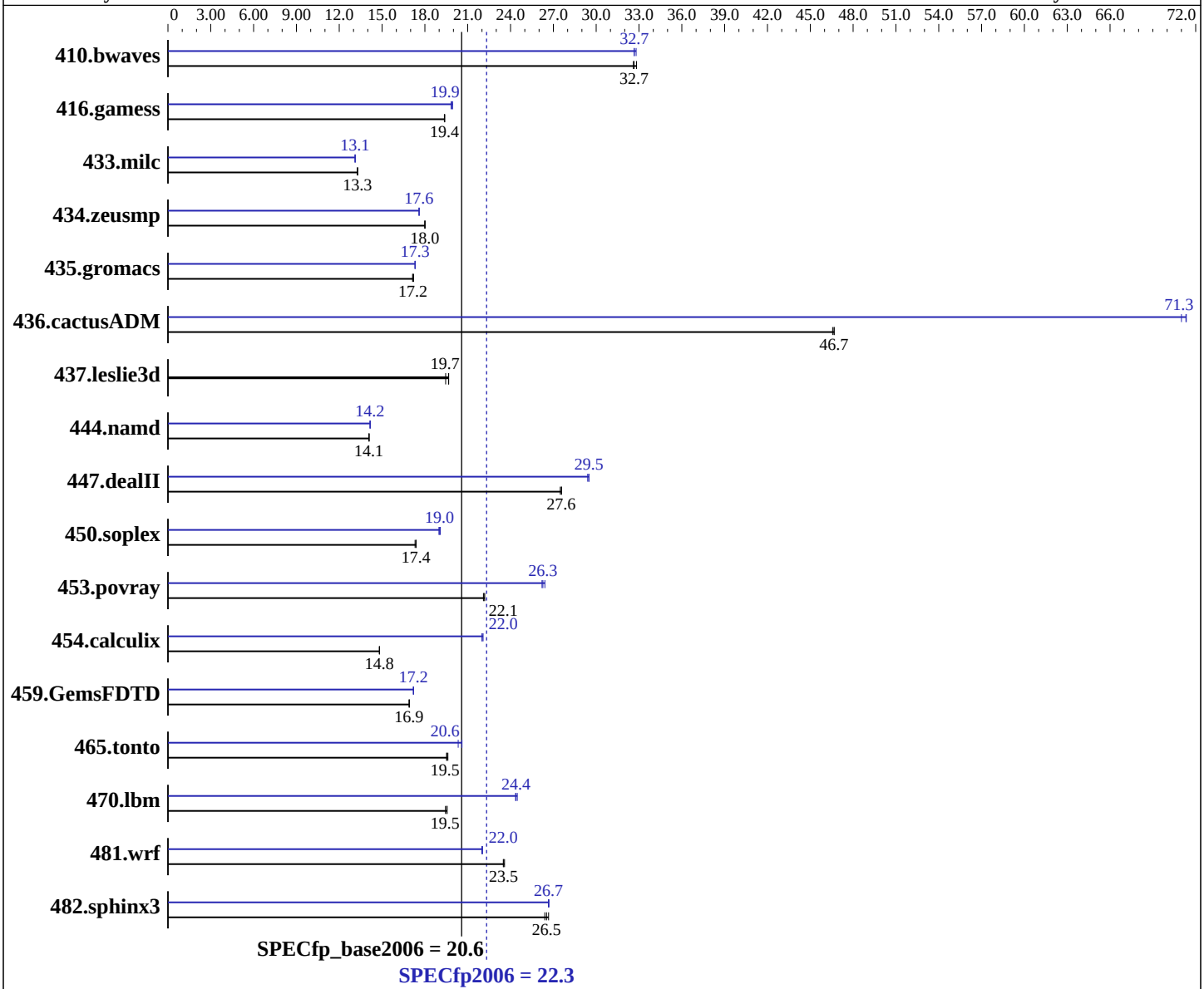
NovaScale T810 E1
(Intel Xeon X3350, 2.66 GHz)

SPECfp®2006 = 22.3

SPECfp_base2006 = 20.6

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

Test date: Jul-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X3350
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2666
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System:	SUSE LINUX Enterprise Server 10 SP1 Kernel 2.6.16.46-0.12-smp for x86_64
Compiler:	Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB) FB-DIMM PC2-6400E ECC CL6
Disk Subsystem: 1x80 GB SATA, 7200 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	417	32.6	414	32.8	**416**	**32.7**	**416**	**32.7**	414	32.8	416	32.7
416.gamess	1010	19.4	**1011**	**19.4**	1011	19.4	987	19.8	982	19.9	**983**	**19.9**
433.milc	**691**	**13.3**	691	13.3	691	13.3	701	13.1	700	13.1	**700**	**13.1**
434.zeusmp	505	18.0	506	18.0	**506**	**18.0**	517	17.6	517	17.6	**517**	**17.6**
435.gromacs	417	17.1	415	17.2	**416**	**17.2**	413	17.3	**412**	**17.3**	412	17.3
436.cactusADM	257	46.6	**256**	**46.7**	256	46.7	**168**	**71.3**	168	71.0	167	71.3
437.leslie3d	478	19.7	**478**	**19.7**	483	19.5	478	19.7	**478**	**19.7**	483	19.5
444.namd	570	14.1	**569**	**14.1**	569	14.1	**566**	**14.2**	566	14.2	566	14.2
447.dealII	415	27.6	416	27.5	**415**	**27.6**	389	29.4	388	29.5	**388**	**29.5**
450.soplex	480	17.4	**480**	**17.4**	482	17.3	437	19.1	439	19.0	**438**	**19.0**
453.povray	241	22.1	**240**	**22.1**	240	22.2	203	26.2	**203**	**26.3**	201	26.4
454.calculix	**557**	**14.8**	556	14.8	557	14.8	374	22.1	**375**	**22.0**	375	22.0
459.GemsFDTD	**628**	**16.9**	627	16.9	628	16.9	617	17.2	**617**	**17.2**	617	17.2
465.tonto	502	19.6	504	19.5	**503**	**19.5**	478	20.6	484	20.3	**478**	**20.6**
470.lbm	**704**	**19.5**	702	19.6	707	19.4	561	24.5	**564**	**24.4**	564	24.4
481.wrf	475	23.5	**475**	**23.5**	474	23.6	508	22.0	507	22.0	**507**	**22.0**
482.sphinx3	731	26.7	738	26.4	**735**	**26.5**	731	26.7	**731**	**26.7**	730	26.7

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
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M
```

General Notes

```
All benchmarks compiled in 64-bit mode except 450.soplex,
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
The Bull NovaScale T810 E1(Intel Xeon X3350, 2.66 GHz),
the Bull NovaScale T830 E1(Intel Xeon X3350, 2.66 GHz) and
the Bull NovaScale R410 E1(Intel Xeon X3350, 2.66 GHz) models are electronically equivalent.
The results have been measured on a Bull NovaScale R410 E1(Intel Xeon X3350, 2.66 GHz) 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 -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
`icpc`

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`icc ifort`

Peak 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`
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 -fno-alias -auto-ilp32`

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

Continued on next page

Peak Optimization Flags (Continued)

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 -opt-malloc-options=3`

453.povray: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-fast -prefetch -parallel`

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: `basepeak = yes`

459.GemsFDTD: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -Ob0 -prefetch -parallel`

465.tonto: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -auto`

Benchmarks using both Fortran and C:

435.gromacs: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -parallel -prefetch -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.xml`

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 19:24:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 August 2008.