Bull SAS

NovaScale T840 F2 (Intel Xeon X5670, 2.93 GHz)

**SPECfp®2006 = 45.8**  
**SPECfp_base2006 = 42.5**

**CPU2006 license:** 20  
**Test sponsor:** Bull SAS  
**Test date:** May-2010  
**Hardware Availability:** Mar-2010  
**Tested by:** Dell Inc.  
**Software Availability:** Dec-2009

### Hardware

- **CPU Name:** Intel Xeon X5670  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.33 GHz  
- **CPU MHz:** 2933  
- **FPU:** Integrated  
- **CPU(s) enabled:** 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
- **CPU(s) orderable:** 1,2 chips  
- **Primary Cache:** 32 KB I + 32 KB D on chip per core  
- **Secondary Cache:** 256 KB I+D on chip per core

### Software

- **Operating System:** SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp  
- **Compiler:** Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1  
  Build 20091130 Package ID: 1_cproc_p_11.1.064, 1_cprof_p_11.1.064  
- **Auto Parallel:** Yes  
- **File System:** ext3  
- **System State:** Run level 3 (multi-user)

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## SPEC CFP2006 Result

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</table>

### Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.

### Platform Notes

**BIOS Settings:**
- Power Management = Maximum Performance (Default = Active Power Controller)
- Data Reuse = Disabled (Default = Enabled)

### General Notes

- OMP_NUM_THREADS set to number of cores
- KMP_AFFINITY set to granularity=fine,scatter
- KMP_STACKSIZE set to 200M

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
General Notes (Continued)

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
The Dell PowerEdge T610 and
the Bull NovaScale T840 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge T610 model.

Base Compiler Invocation

C benchmarks:
  icc  -m64
C++ benchmarks:
  icpc  -m64
Fortran benchmarks:
  ifort  -m64

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  -DSPEC_CPU_CASE_FLAG
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:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
C++ benchmarks:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
### Base Optimization Flags (Continued)

Fortran benchmarks:
- `xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
- `xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

### Peak Compiler Invocation

- **C benchmarks:**
  - `icc -m64`

- **C++ benchmarks:**
  - `icpc -m64`

- **Fortran benchmarks:**
  - `ifort -m64`

Benchmarks using both Fortran and C:
- `icc -m64 ifort -m64`

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

- **C benchmarks:**
  - 433.milc: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -ansi-alias`
  - 470.lbm: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -ansi-alias -auto-ilp32`
  - 482.sphinx3: `basepeak = yes`

- **C++ benchmarks:**
  - 444.namd: `basepeak = yes`
  - 447.dealII: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias -scalar-rep -auto-ilp32`

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Peak Optimization Flags (Continued)

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
opt-malloc-options=3 -auto-ilp32

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at
# SPEC CFP2006 Result

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You can also download the XML flags source by saving the following link:


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For other inquiries, please contact webmaster@spec.org.

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