# SPEC® CFP2006 Result



## Bull SAS

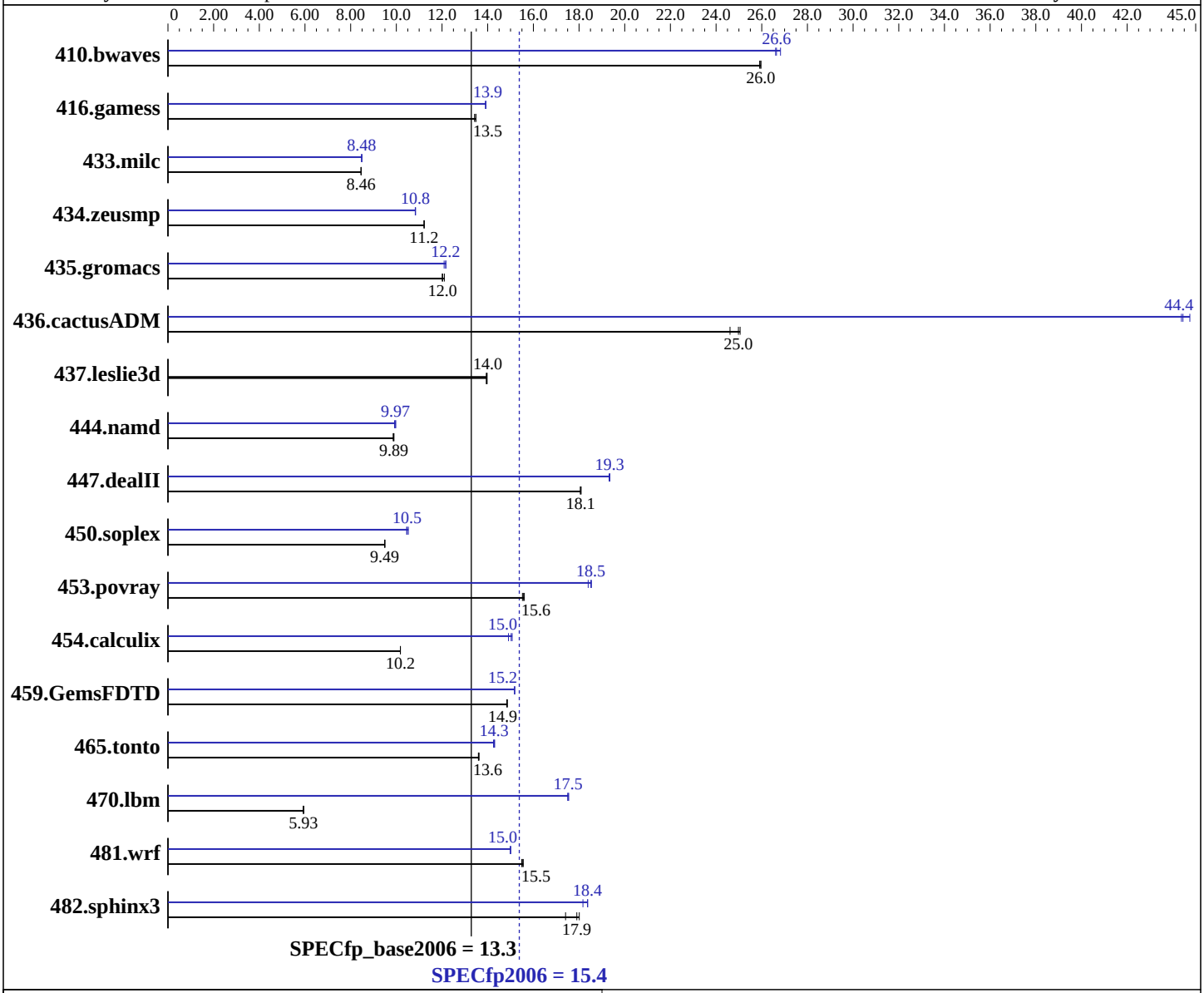
NovaScale T860 E1
(Intel Xeon E5205,1.86GHz)

SPECfp®2006 = 15.4

SPECfp_base2006 = 13.3

**CPU2006 license:** 20
**Test sponsor:** Bull SAS
**Tested by:** NEC Corporation

**Test date:** Feb-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5205 |
| CPU Characteristics: | 1.86 GHz, 6 MB L2, 1066 MHz bus |
| CPU MHz: | 1867 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 MB I+D on chip per chip |

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### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008 |
| Auto Parallel: | Yes |
| File System: | ext2 |

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L3 Cache: None
Other Cache: None
Memory: 12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 15000RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.tar.gz, Version 2.17

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | **524** | **26.0** | 523 | 26.0 | 525 | 25.9 | 507 | 26.8 | **510** | **26.6** | 511 | 26.6 |
| 416.gamess | **1453** | **13.5** | 1452 | 13.5 | 1459 | 13.4 | **1408** | **13.9** | 1408 | 13.9 | 1406 | 13.9 |
| 433.milc | **1085** | **8.46** | 1085 | 8.46 | 1086 | 8.46 | 1083 | 8.48 | **1082** | **8.48** | 1081 | 8.49 |
| 434.zeusmp | 811 | 11.2 | 811 | 11.2 | **811** | **11.2** | **840** | **10.8** | 840 | 10.8 | 839 | 10.8 |
| 435.gromacs | **594** | **12.0** | 590 | 12.1 | 595 | 12.0 | 590 | 12.1 | **587** | **12.2** | 587 | 12.2 |
| 436.cactusADM | 477 | 25.1 | 486 | 24.6 | **478** | **25.0** | 269 | 44.4 | **269** | **44.4** | 267 | 44.7 |
| 437.leslie3d | **673** | **14.0** | 673 | 14.0 | 674 | 13.9 | **673** | **14.0** | 673 | 14.0 | 674 | 13.9 |
| 444.namd | 813 | 9.86 | **811** | **9.89** | 811 | 9.89 | 808 | 9.92 | **805** | **9.97** | 804 | 9.97 |
| 447.dealII | **633** | **18.1** | 632 | 18.1 | 634 | 18.1 | 591 | 19.3 | 592 | 19.3 | **591** | **19.3** |
| 450.soplex | 878 | 9.50 | **878** | **9.49** | 879 | 9.49 | 792 | 10.5 | **796** | **10.5** | 798 | 10.5 |
| 453.povray | 341 | 15.6 | 343 | 15.5 | **342** | **15.6** | **287** | **18.5** | 289 | 18.4 | 287 | 18.5 |
| 454.calculix | 811 | 10.2 | 811 | 10.2 | **811** | **10.2** | 553 | 14.9 | **549** | **15.0** | 547 | 15.1 |
| 459.GemsFDTD | **714** | **14.9** | 715 | 14.8 | 714 | 14.9 | **699** | **15.2** | 699 | 15.2 | 699 | 15.2 |
| 465.tonto | 724 | 13.6 | 722 | 13.6 | **723** | **13.6** | 688 | 14.3 | **689** | **14.3** | 690 | 14.3 |
| 470.lbm | 2309 | 5.95 | **2317** | **5.93** | 2321 | 5.92 | **784** | **17.5** | 785 | 17.5 | 783 | 17.5 |
| 481.wrf | 718 | 15.6 | **720** | **15.5** | 721 | 15.5 | 745 | 15.0 | **744** | **15.0** | 744 | 15.0 |
| 482.sphinx3 | 1082 | 18.0 | 1119 | 17.4 | **1089** | **17.9** | 1061 | 18.4 | **1061** | **18.4** | 1073 | 18.2 |

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
```

## Platform Notes

```
Bios settings:
Intel SpeedStep Technology: Disabled
```

## General Notes

```
All benchmarks compiled in 64-bit mode except 450.soplex,
470.lbm and 482.sphinx3, for peak, are compiled in 32-bit mode
```

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## General Notes (Continued)

```
The NEC Express5800/120Lj(Intel Xeon E5205) and
the Bull NovaScale T860 E1(Intel Xeon E5205,1.86GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/120Lj(Intel Xeon E5205) 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

Continued on next page

## Base Optimization Flags (Continued)

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`

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`

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## Peak Optimization Flags (Continued)

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/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.xml`



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

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