



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale B260  
(Intel Xeon E5450, 3.00 GHz)

SPECint®2006 = 26.4

SPECint\_base2006 = 23.2

CPU2006 license: 20

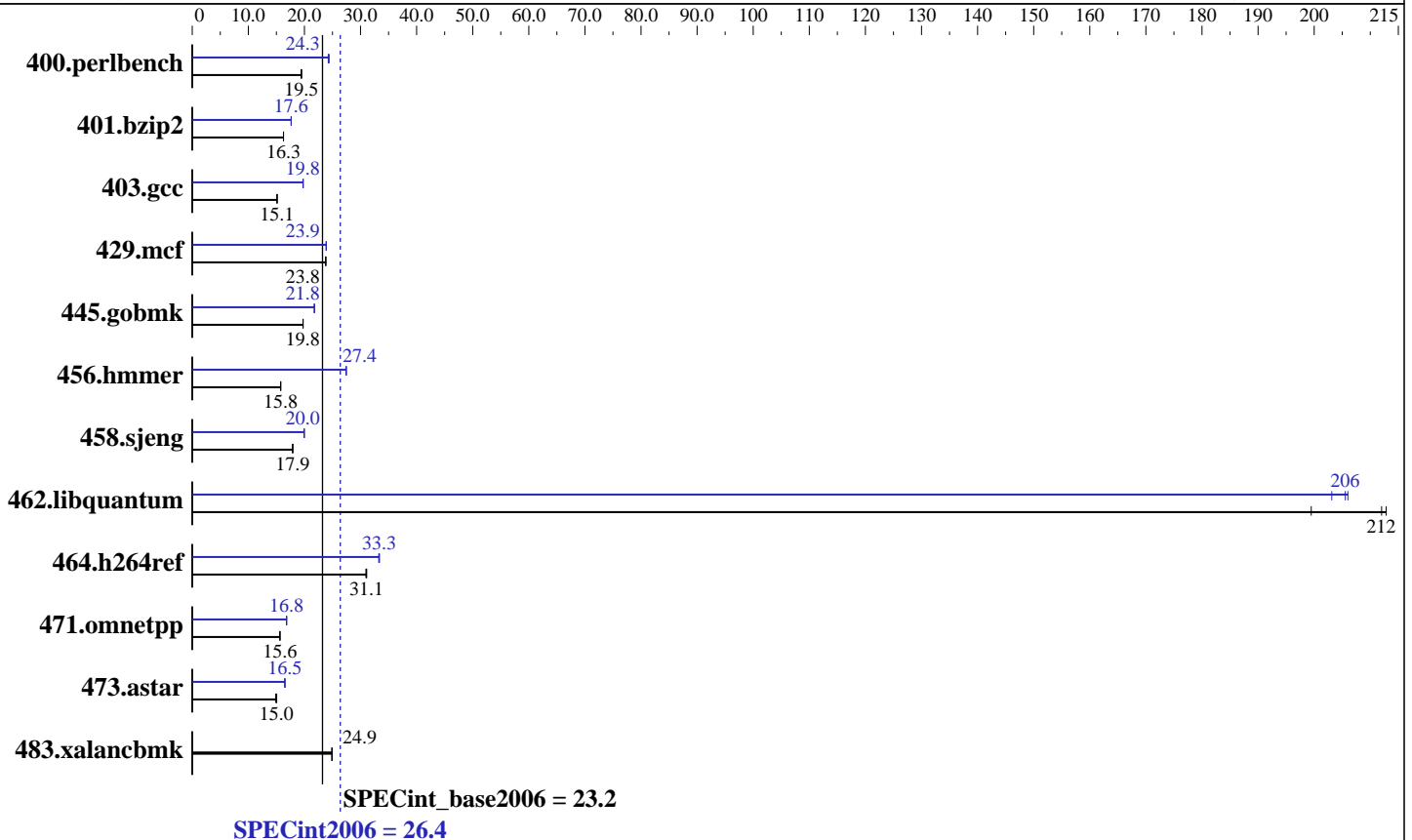
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Aug-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5450  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (4x2 GB) FB-DIMM PC2-5300F ECC CL5  
 Disk Subsystem: 1x73 GB SAS, 10000 RPM  
 Other Hardware: None

### Software

Operating System: SUSE LINUX Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Binutils 2.17.50.0.15  
 SmartHeap library V8.1



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## Results Table

| Benchmark      | Base       |             |            |             |             |             | Peak       |             |            |             |            |             |
|----------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|
|                | Seconds    | Ratio       | Seconds    | Ratio       | Seconds     | Ratio       | Seconds    | Ratio       | Seconds    | Ratio       | Seconds    | Ratio       |
| 400.perlbench  | 504        | 19.4        | <u>502</u> | <u>19.5</u> | 501         | 19.5        | 400        | 24.4        | 403        | 24.2        | <u>402</u> | <u>24.3</u> |
| 401.bzip2      | 593        | 16.3        | <u>593</u> | <u>16.3</u> | 593         | 16.3        | 547        | 17.6        | <u>547</u> | <u>17.6</u> | 547        | 17.6        |
| 403.gcc        | 534        | 15.1        | <u>533</u> | <u>15.1</u> | 531         | 15.2        | <u>408</u> | <u>19.8</u> | 407        | 19.8        | 408        | 19.7        |
| 429.mcf        | 383        | 23.8        | <u>383</u> | <u>23.8</u> | 383         | 23.8        | 381        | 23.9        | <u>382</u> | <u>23.9</u> | 382        | 23.9        |
| 445.gobmk      | 531        | 19.8        | 531        | 19.7        | <u>531</u>  | <u>19.8</u> | 482        | 21.8        | <u>482</u> | <u>21.8</u> | 482        | 21.8        |
| 456.hmmmer     | <u>592</u> | <u>15.8</u> | 592        | 15.8        | 591         | 15.8        | 340        | 27.4        | 340        | 27.5        | <u>340</u> | <u>27.4</u> |
| 458.sjeng      | 677        | 17.9        | 675        | 17.9        | <u>675</u>  | <u>17.9</u> | 607        | 19.9        | <u>606</u> | <u>20.0</u> | 606        | 20.0        |
| 462.libquantum | 104        | 199         | 97.4       | 213         | <u>97.7</u> | <u>212</u>  | 102        | 203         | 101        | 206         | <u>101</u> | <u>206</u>  |
| 464.h264ref    | 715        | 31.0        | <u>712</u> | <u>31.1</u> | 712         | 31.1        | <u>664</u> | <u>33.3</u> | 666        | 33.3        | 663        | 33.4        |
| 471.omnetpp    | 400        | 15.6        | <u>400</u> | <u>15.6</u> | 400         | 15.6        | <u>372</u> | <u>16.8</u> | 372        | 16.8        | 371        | 16.8        |
| 473.astar      | 466        | 15.1        | 472        | 14.9        | <u>467</u>  | <u>15.0</u> | <u>425</u> | <u>16.5</u> | 426        | 16.5        | 424        | 16.5        |
| 483.xalancbmk  | <u>277</u> | <u>24.9</u> | 277        | 24.9        | 277         | 24.9        | <u>277</u> | <u>24.9</u> | 277        | 24.9        | 277        | 24.9        |

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

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode  
BIOS settings :  
Hardware Prefetcher : Enabled  
Adjacent Cache-Line Prefetch : Enabled

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-fast -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/spec/cpu2006/lib -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

456.hmmmer: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:  
icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

483.xalanbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo  
-no-prec-div -ansi-alias

456.hmmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive  
-auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch  
-opt-streaming-stores always -vec-guard-write  
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=block  
-Wl,-z,muldefs -L/spec/cpu2006/lib -lsmarheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs -L/spec/cpu2006/lib -lsmarheap

483.xalanbmk: basepeak = yes



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## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/EM64T\\_Intel101\\_int\\_flags.20090714.html](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.html)

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

[http://www.spec.org/cpu2006/flags/EM64T\\_Intel101\\_int\\_flags.20090714.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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