



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale B260+  
(Intel Xeon E5440, 2.83 GHz)

SPECint®2006 = 25.7

SPECint\_base2006 = 22.5

CPU2006 license: 20

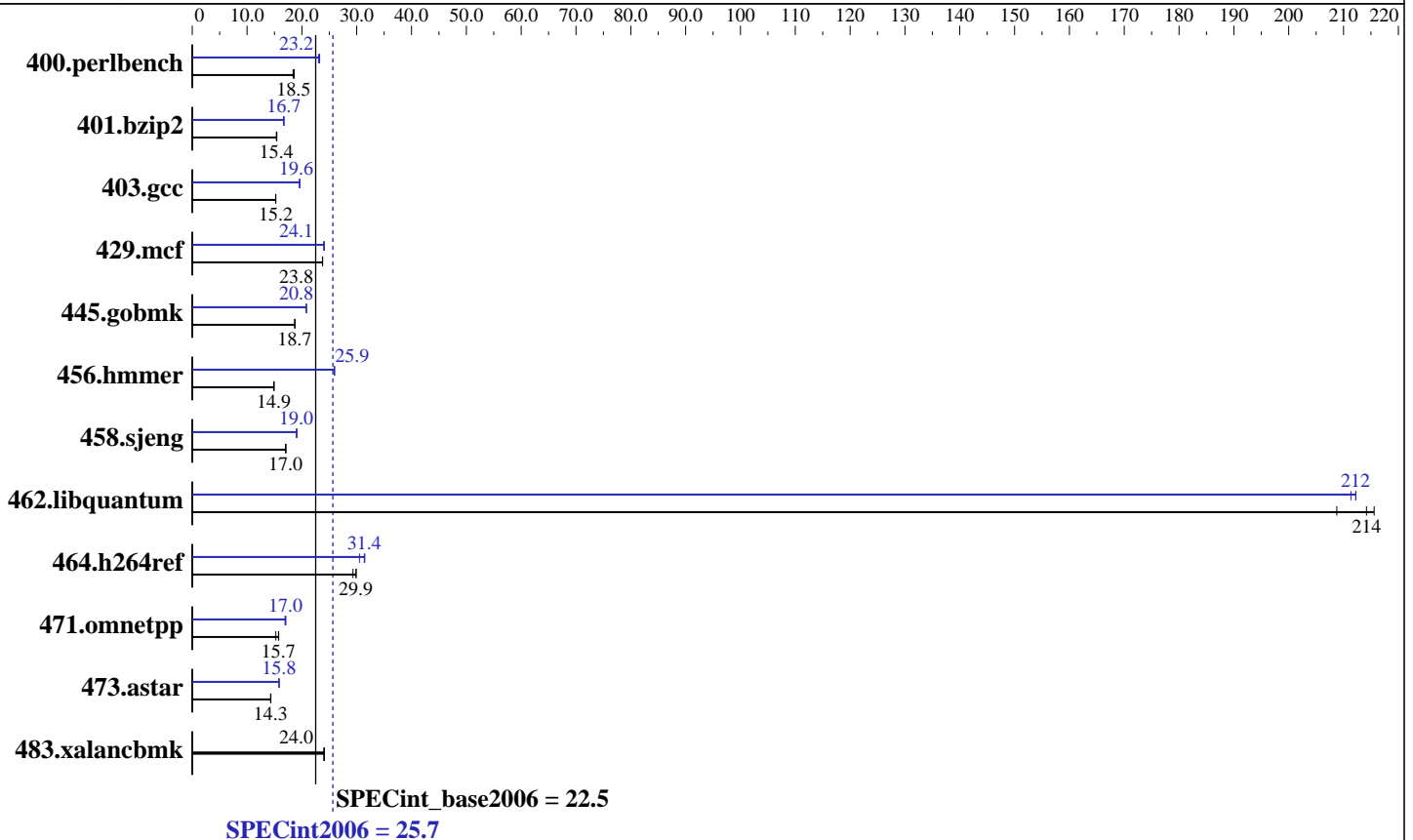
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2833  
 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: 16 GB (8x2 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	526	18.6	<u>527</u>	<u>18.5</u>	531	18.4	<u>421</u>	<u>23.2</u>	424	23.0	420	23.2
401.bzip2	625	15.4	629	15.3	<u>627</u>	<u>15.4</u>	578	16.7	577	16.7	<u>577</u>	<u>16.7</u>
403.gcc	529	15.2	<u>529</u>	<u>15.2</u>	528	15.2	411	19.6	<u>411</u>	<u>19.6</u>	411	19.6
429.mcf	<u>384</u>	<u>23.8</u>	384	23.8	384	23.8	<u>379</u>	<u>24.1</u>	380	24.0	379	24.1
445.gobmk	561	18.7	<u>561</u>	<u>18.7</u>	560	18.7	504	20.8	<u>504</u>	<u>20.8</u>	504	20.8
456.hmmmer	627	14.9	<u>626</u>	<u>14.9</u>	626	14.9	359	26.0	360	25.9	<u>360</u>	<u>25.9</u>
458.sjeng	707	17.1	712	17.0	<u>710</u>	<u>17.0</u>	637	19.0	<u>635</u>	<u>19.0</u>	634	19.1
462.libquantum	<u>96.7</u>	<u>214</u>	99.3	209	96.1	216	98.0	211	97.6	212	<u>97.6</u>	<u>212</u>
464.h264ref	740	29.9	<u>741</u>	<u>29.9</u>	755	29.3	703	31.5	726	30.5	<u>705</u>	<u>31.4</u>
471.omnetpp	<u>397</u>	<u>15.7</u>	410	15.2	396	15.8	366	17.1	369	16.9	<u>367</u>	<u>17.0</u>
473.astar	<u>490</u>	<u>14.3</u>	489	14.3	491	14.3	<u>443</u>	<u>15.8</u>	444	15.8	443	15.8
483.xalancbmk	<u>287</u>	<u>24.0</u>	287	24.0	286	24.1	<u>287</u>	<u>24.0</u>	287	24.0	286	24.1

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.hmmr: /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.hmmr: -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.hmmr: -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.20090713.00.html](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_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\\_int\\_flags.20090713.00.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.00.xml)

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

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