



# SPEC<sup>®</sup> CINT2006 Result

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## Bull SAS

NovaScale B260  
(Intel Xeon E5405, 2.00 GHz)

SPECint<sup>®</sup>2006 = 19.0

SPECint\_base2006 = 16.6

CPU2006 license: 20

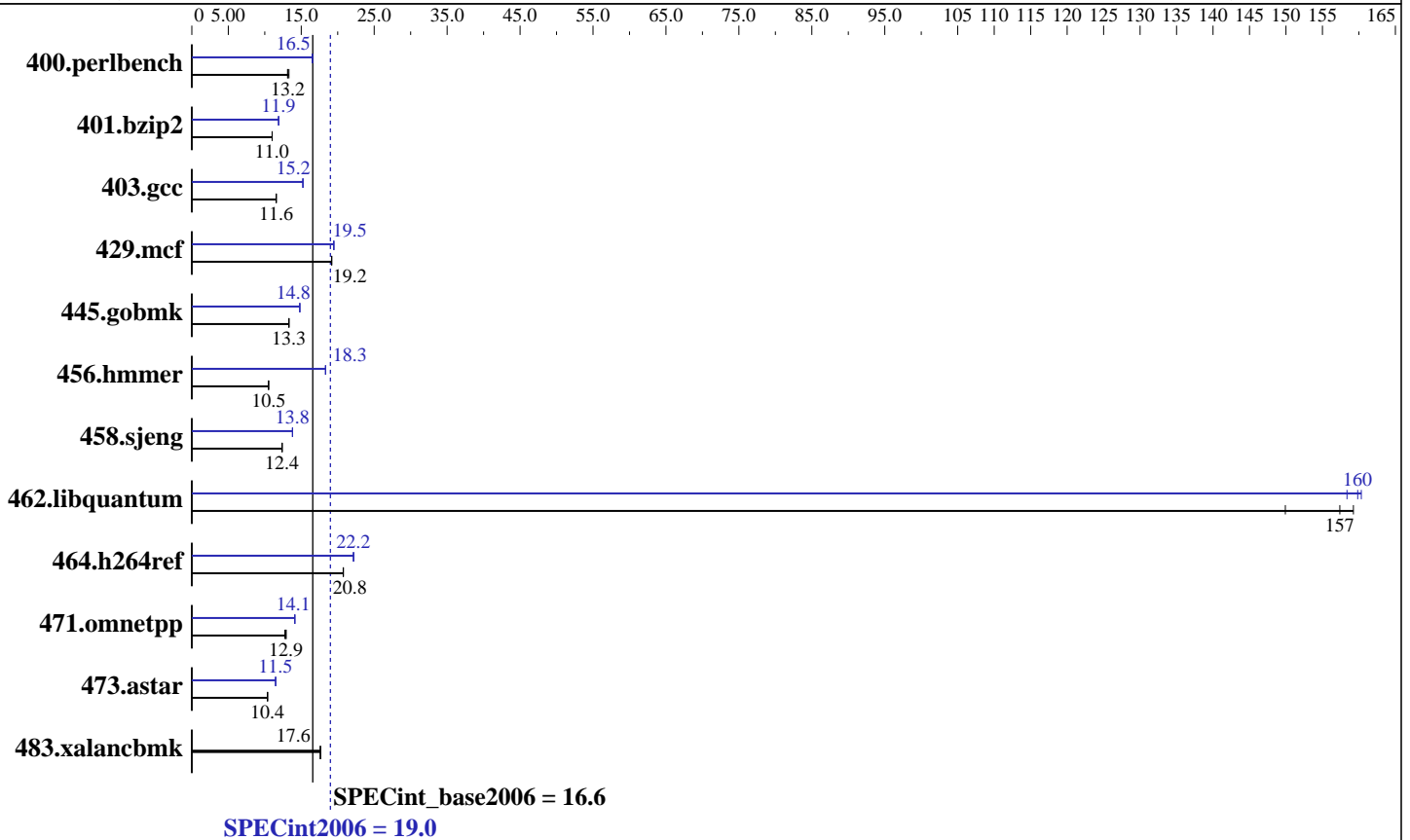
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Sep-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5405  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2000  
 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 (4x4 GB) FB-DIMM PC2-5300F ECC CL5  
 Disk Subsystem: 1x73 GB SAS, 15000 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	745	13.1	<b><u>741</u></b>	<b><u>13.2</u></b>	734	13.3	593	16.5	<b><u>592</u></b>	<b><u>16.5</u></b>	589	16.6
401.bzip2	<b><u>876</u></b>	<b><u>11.0</u></b>	876	11.0	877	11.0	811	11.9	811	11.9	<b><u>811</u></b>	<b><u>11.9</u></b>
403.gcc	695	11.6	<b><u>696</u></b>	<b><u>11.6</u></b>	696	11.6	<b><u>528</u></b>	<b><u>15.2</u></b>	529	15.2	528	15.2
429.mcf	475	19.2	476	19.2	<b><u>476</u></b>	<b><u>19.2</u></b>	<b><u>468</u></b>	<b><u>19.5</u></b>	468	19.5	469	19.5
445.gobmk	788	13.3	788	13.3	<b><u>788</u></b>	<b><u>13.3</u></b>	709	14.8	<b><u>709</u></b>	<b><u>14.8</u></b>	709	14.8
456.hmmmer	888	10.5	<b><u>886</u></b>	<b><u>10.5</u></b>	886	10.5	<b><u>509</u></b>	<b><u>18.3</u></b>	509	18.3	509	18.3
458.sjeng	976	12.4	979	12.4	<b><u>979</u></b>	<b><u>12.4</u></b>	877	13.8	<b><u>876</u></b>	<b><u>13.8</u></b>	876	13.8
462.libquantum	138	150	130	159	<b><u>132</u></b>	<b><u>157</u></b>	<b><u>130</u></b>	<b><u>160</u></b>	131	158	129	160
464.h264ref	<b><u>1065</u></b>	<b><u>20.8</u></b>	1067	20.7	1065	20.8	<b><u>998</u></b>	<b><u>22.2</u></b>	1000	22.1	997	22.2
471.omnetpp	<b><u>484</u></b>	<b><u>12.9</u></b>	483	12.9	490	12.8	<b><u>443</u></b>	<b><u>14.1</u></b>	443	14.1	443	14.1
473.astar	677	10.4	675	10.4	<b><u>676</u></b>	<b><u>10.4</u></b>	611	11.5	<b><u>611</u></b>	<b><u>11.5</u></b>	611	11.5
483.xalancbmk	<b><u>391</u></b>	<b><u>17.6</u></b>	392	17.6	391	17.6	<b><u>391</u></b>	<b><u>17.6</u></b>	392	17.6	391	17.6

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

## Platform Notes

BIOS configuration:  
Hardware Prefetcher Enabled  
Adjacent Cache-Line Prefetch Enabled

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer,  
for peak, are compiled in 64-bit mode

## 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.xalancbmk: -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 -lsmartheap

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 -lsmartheap

483.xalancbmk: basepeak = yes



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## Peak Other Flags

Same as Base Other Flags

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.html](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.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.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.xml)

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

Tested with SPEC CPU2006 v1.1.  
Report generated on Mon Jul 13 14:50:32 2009 by SPEC CPU2006 PS/PDF formatter v6323.