



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale B280  
(Intel Xeon E5405, 2.00 GHz)

SPECint®2006 = 19.2

SPECint\_base2006 = 16.8

CPU2006 license: 20

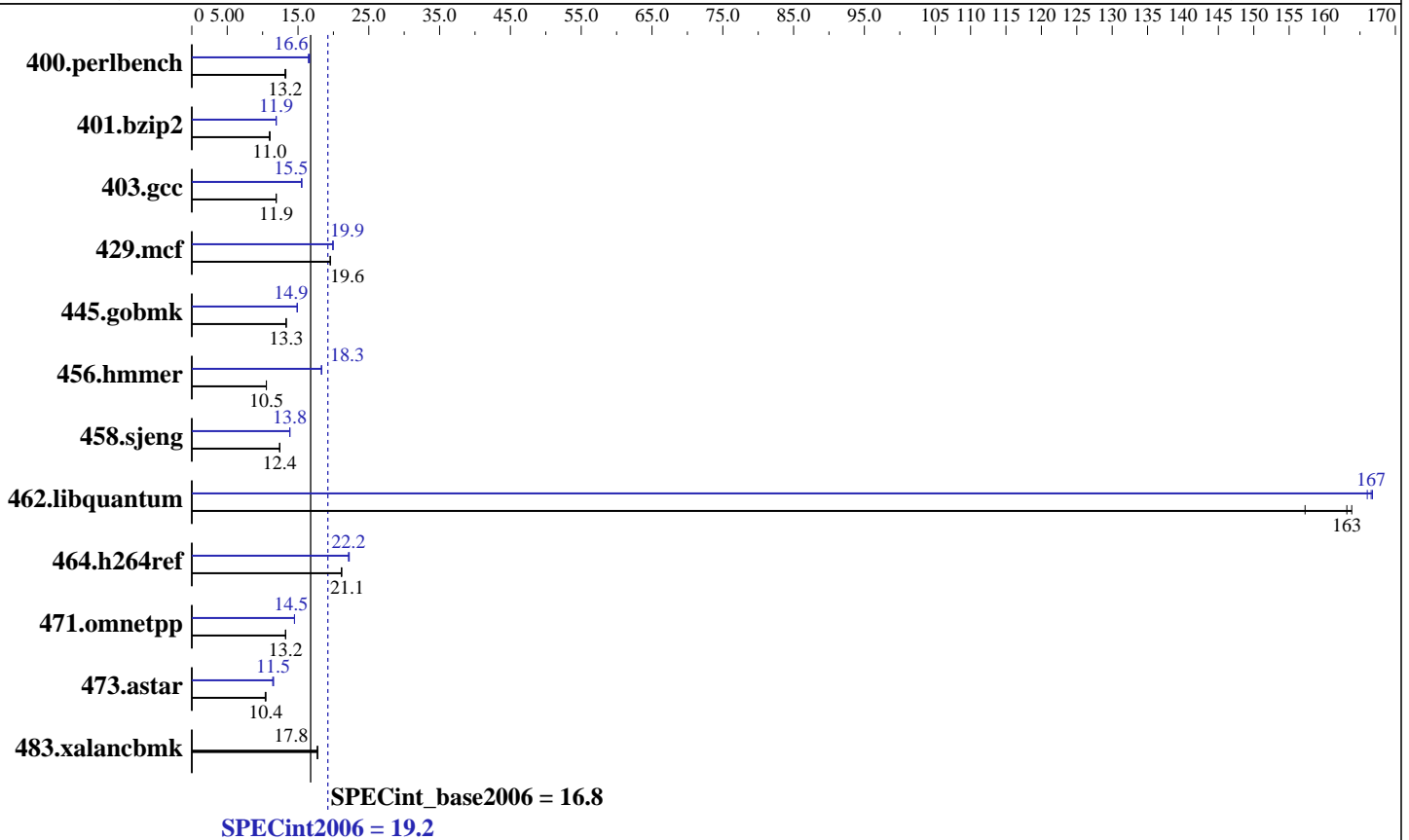
Test sponsor: Bull SAS

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 (8x2 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	735	13.3	<b><u>740</u></b>	<b><u>13.2</u></b>	742	13.2	<b><u>590</u></b>	<b><u>16.6</u></b>	587	16.6	593	16.5
401.bzip2	874	11.0	<b><u>877</u></b>	<b><u>11.0</u></b>	880	11.0	809	11.9	811	11.9	<b><u>810</u></b>	<b><u>11.9</u></b>
403.gcc	676	11.9	<b><u>676</u></b>	<b><u>11.9</u></b>	675	11.9	520	15.5	<b><u>519</u></b>	<b><u>15.5</u></b>	518	15.5
429.mcf	466	19.6	<b><u>466</u></b>	<b><u>19.6</u></b>	466	19.6	<b><u>458</u></b>	<b><u>19.9</u></b>	457	20.0	458	19.9
445.gobmk	787	13.3	787	13.3	<b><u>787</u></b>	<b><u>13.3</u></b>	704	14.9	704	14.9	<b><u>704</u></b>	<b><u>14.9</u></b>
456.hmmmer	887	10.5	<b><u>886</u></b>	<b><u>10.5</u></b>	885	10.5	<b><u>509</u></b>	<b><u>18.3</u></b>	509	18.3	510	18.3
458.sjeng	<b><u>975</u></b>	<b><u>12.4</u></b>	974	12.4	975	12.4	875	13.8	874	13.9	<b><u>874</u></b>	<b><u>13.8</u></b>
462.libquantum	126	164	132	157	<b><u>127</u></b>	<b><u>163</u></b>	<b><u>124</u></b>	<b><u>167</u></b>	125	166	124	167
464.h264ref	<b><u>1047</u></b>	<b><u>21.1</u></b>	1045	21.2	1048	21.1	995	22.2	999	22.1	<b><u>999</u></b>	<b><u>22.2</u></b>
471.omnetpp	471	13.3	472	13.2	<b><u>472</u></b>	<b><u>13.2</u></b>	<b><u>431</u></b>	<b><u>14.5</u></b>	431	14.5	431	14.5
473.astar	677	10.4	<b><u>672</u></b>	<b><u>10.4</u></b>	672	10.5	614	11.4	<b><u>609</u></b>	<b><u>11.5</u></b>	609	11.5
483.xalancbmk	389	17.7	<b><u>389</u></b>	<b><u>17.8</u></b>	388	17.8	389	17.7	<b><u>389</u></b>	<b><u>17.8</u></b>	388	17.8

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.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.xalancbmk: 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.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).

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