



# SPEC<sup>®</sup> CINT2006 Result

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## Bull SAS

NovaScale B260  
(Intel Xeon E5440, 2.83 GHz)

SPECint<sup>®</sup>\_rate2006 = 118

SPECint\_rate\_base2006 = 91.8

CPU2006 license: 20

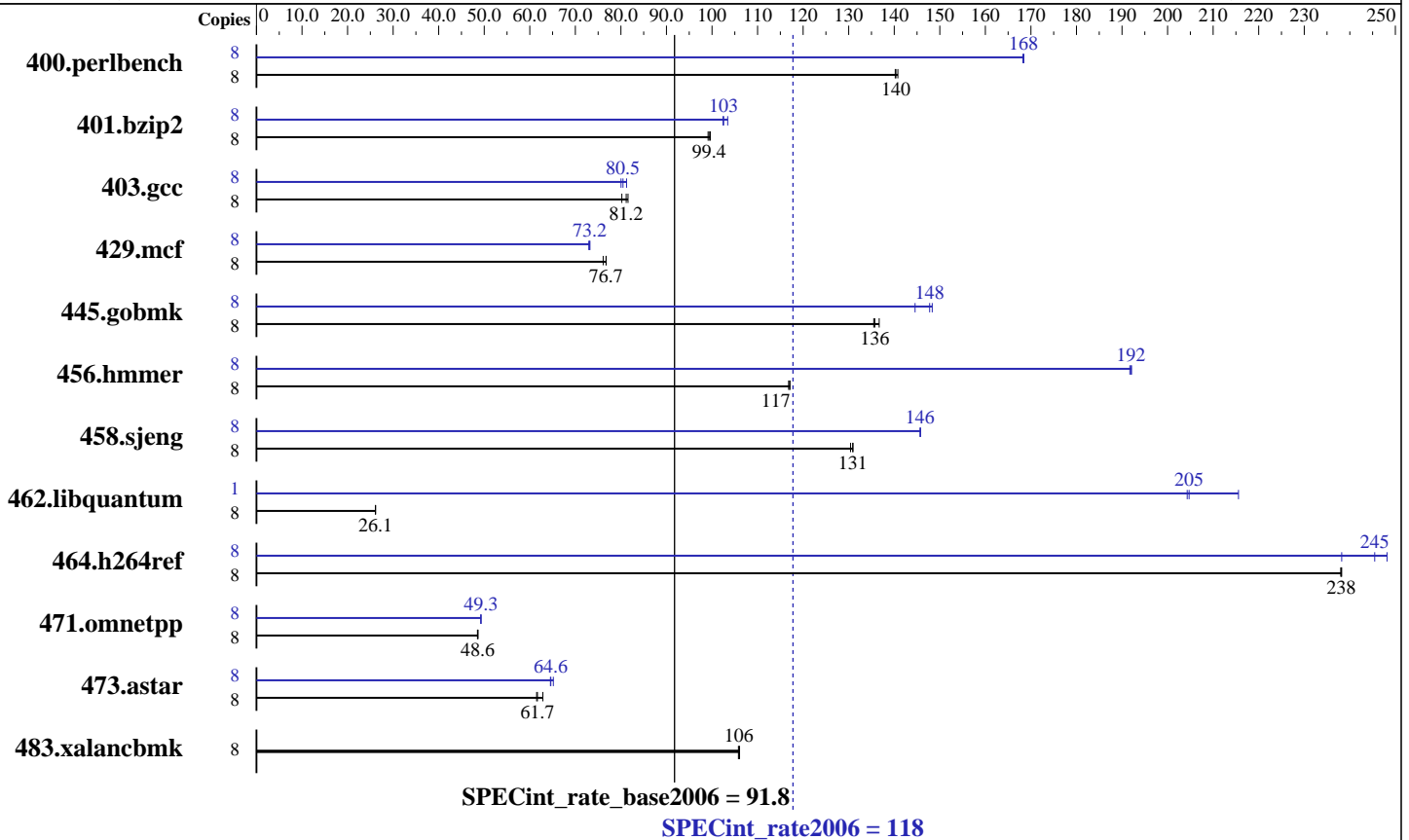
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Sep-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon 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 (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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	<u>557</u>	<u>140</u>	555	141	557	140	8	464	168	465	168	<u>464</u>	<u>168</u>
401.bzip2	8	775	99.6	<u>777</u>	<u>99.4</u>	779	99.1	8	746	103	<u>753</u>	<u>103</u>	754	102
403.gcc	8	<u>794</u>	<u>81.2</u>	803	80.2	790	81.6	8	793	81.2	805	80.0	<u>800</u>	<u>80.5</u>
429.mcf	8	951	76.8	959	76.1	<u>951</u>	<u>76.7</u>	8	<u>997</u>	<u>73.2</u>	997	73.2	1000	72.9
445.gobmk	8	614	137	619	136	<u>618</u>	<u>136</u>	8	580	145	<u>568</u>	<u>148</u>	566	148
456.hmmer	8	637	117	<u>638</u>	<u>117</u>	639	117	8	389	192	<u>389</u>	<u>192</u>	389	192
458.sjeng	8	742	130	739	131	<u>740</u>	<u>131</u>	8	<u>664</u>	<u>146</u>	664	146	664	146
462.libquantum	8	<u>6345</u>	<u>26.1</u>	6345	26.1	6344	26.1	1	96.1	216	101	204	<u>101</u>	<u>205</u>
464.h264ref	8	<u>743</u>	<u>238</u>	743	238	744	238	8	<u>721</u>	<u>245</u>	743	238	713	248
471.omnetpp	8	1031	48.5	1029	48.6	<u>1029</u>	<u>48.6</u>	8	1015	49.3	1015	49.3	<u>1015</u>	<u>49.3</u>
473.astar	8	893	62.9	913	61.5	<u>911</u>	<u>61.7</u>	8	870	64.5	<u>869</u>	<u>64.6</u>	862	65.2
483.xalancbmk	8	522	106	<u>521</u>	<u>106</u>	521	106	8	522	106	<u>521</u>	<u>106</u>	521	106

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 64M

## General Notes

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

## Base Compiler Invocation

C benchmarks:  
icc  
  
C++ benchmarks:  
icpc

## Base Portability Flags

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

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## Base Portability Flags (Continued)

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-fast -inline-calloc -opt-malloc-options=3  
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.hmmer: /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.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX



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## 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

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.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

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

## 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)



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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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