



# SPEC<sup>®</sup> CINT2006 Result

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## Bull SAS

NovaScale R480 E1  
(Intel Xeon E7210, 2.40 GHz)

SPECint<sup>®</sup>\_rate2006 = 123

SPECint\_rate\_base2006 = 103

CPU2006 license: 20

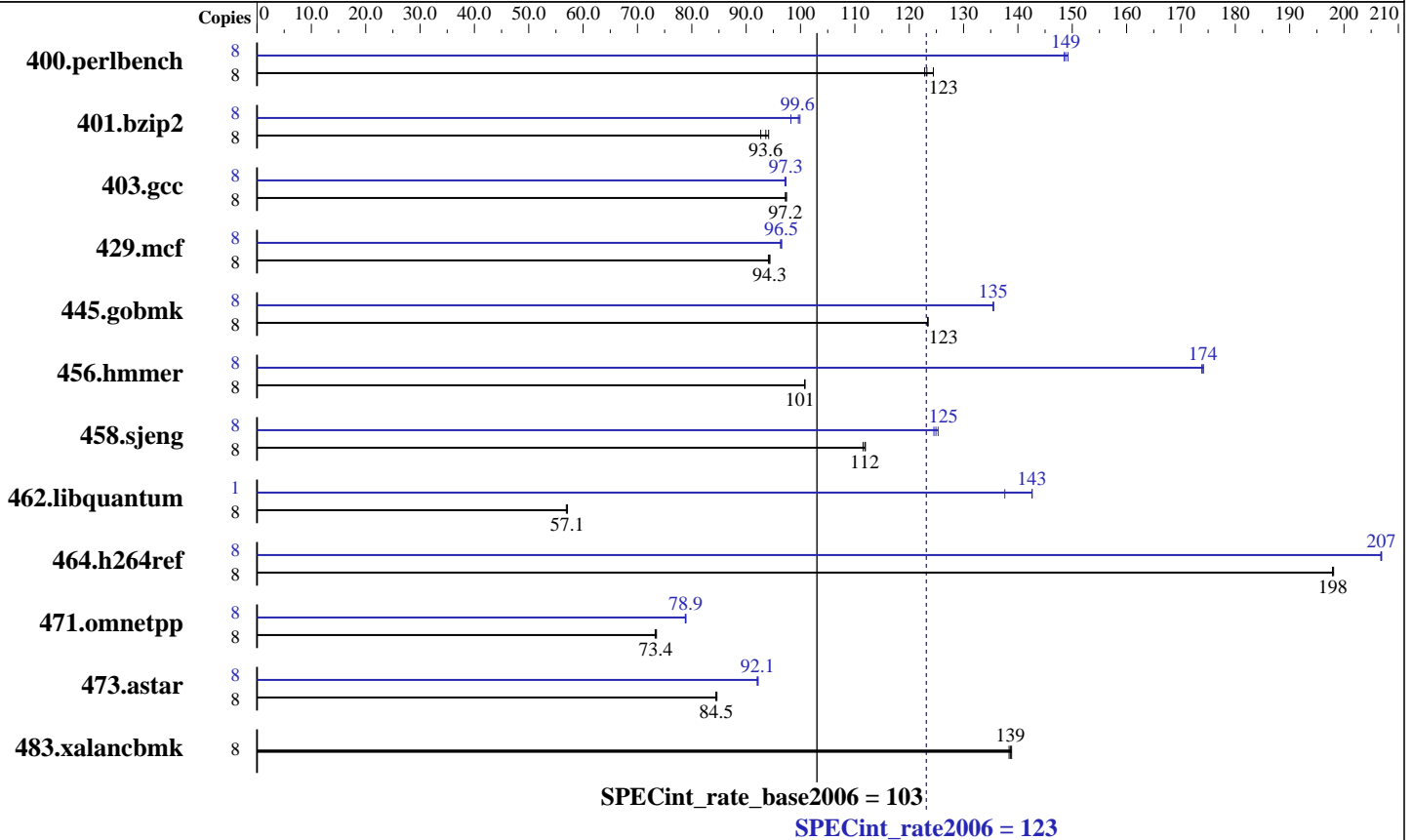
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Aug-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E7210  
 CPU Characteristics: 1066 MHz system bus  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 1 to 4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 4 MB I+D on chip per core  
 L3 Cache: None  
 Other Cache: None  
 Memory: 32 GB (16x2 GB) FB-DIMM PC2-5300F ECC CL5  
 Disk Subsystem: 1x146 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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	628	124	<b>634</b>	<b>123</b>	636	123	8	524	149	526	149	<b>525</b>	<b>149</b>
401.bzip2	8	820	94.1	833	92.7	<b>825</b>	<b>93.6</b>	8	786	98.2	773	99.9	<b>775</b>	<b>99.6</b>
403.gcc	8	662	97.2	<b>662</b>	<b>97.2</b>	661	97.4	8	<b>662</b>	<b>97.3</b>	663	97.1	662	97.3
429.mcf	8	773	94.4	775	94.1	<b>774</b>	<b>94.3</b>	8	<b>756</b>	<b>96.5</b>	757	96.3	756	96.5
445.gobmk	8	680	123	<b>680</b>	<b>123</b>	680	123	8	620	135	<b>619</b>	<b>135</b>	619	136
456.hmmmer	8	740	101	741	101	<b>741</b>	<b>101</b>	8	429	174	429	174	<b>429</b>	<b>174</b>
458.sjeng	8	<b>866</b>	<b>112</b>	868	112	865	112	8	777	125	<b>775</b>	<b>125</b>	772	125
462.libquantum	8	<b>2905</b>	<b>57.1</b>	2913	56.9	2902	57.1	1	145	143	151	138	<b>145</b>	<b>143</b>
464.h264ref	8	894	198	<b>894</b>	<b>198</b>	895	198	8	856	207	<b>856</b>	<b>207</b>	856	207
471.omnetpp	8	683	73.3	<b>681</b>	<b>73.4</b>	680	73.5	8	634	78.8	634	78.9	<b>634</b>	<b>78.9</b>
473.astar	8	<b>665</b>	<b>84.5</b>	665	84.4	664	84.6	8	609	92.2	<b>610</b>	<b>92.1</b>	610	92.0
483.xalancbmk	8	398	139	399	138	<b>398</b>	<b>139</b>	8	398	139	399	138	<b>398</b>	<b>139</b>

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.hmmmer, for peak, are compiled in 64-bit mode  
BIOS settings :  
Hardware Prefetcher : Disabled  
Adjacent Cache-Line Prefetch : Disabled

## 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 -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

Continued on next page



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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

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:

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## Peak Other Flags (Continued)

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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