



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale R460  
(Intel Xeon E5310, 1.60GHz)

SPECint®\_rate2006 = 41.6

SPECint\_rate\_base2006 = 36.3

CPU2006 license: 20

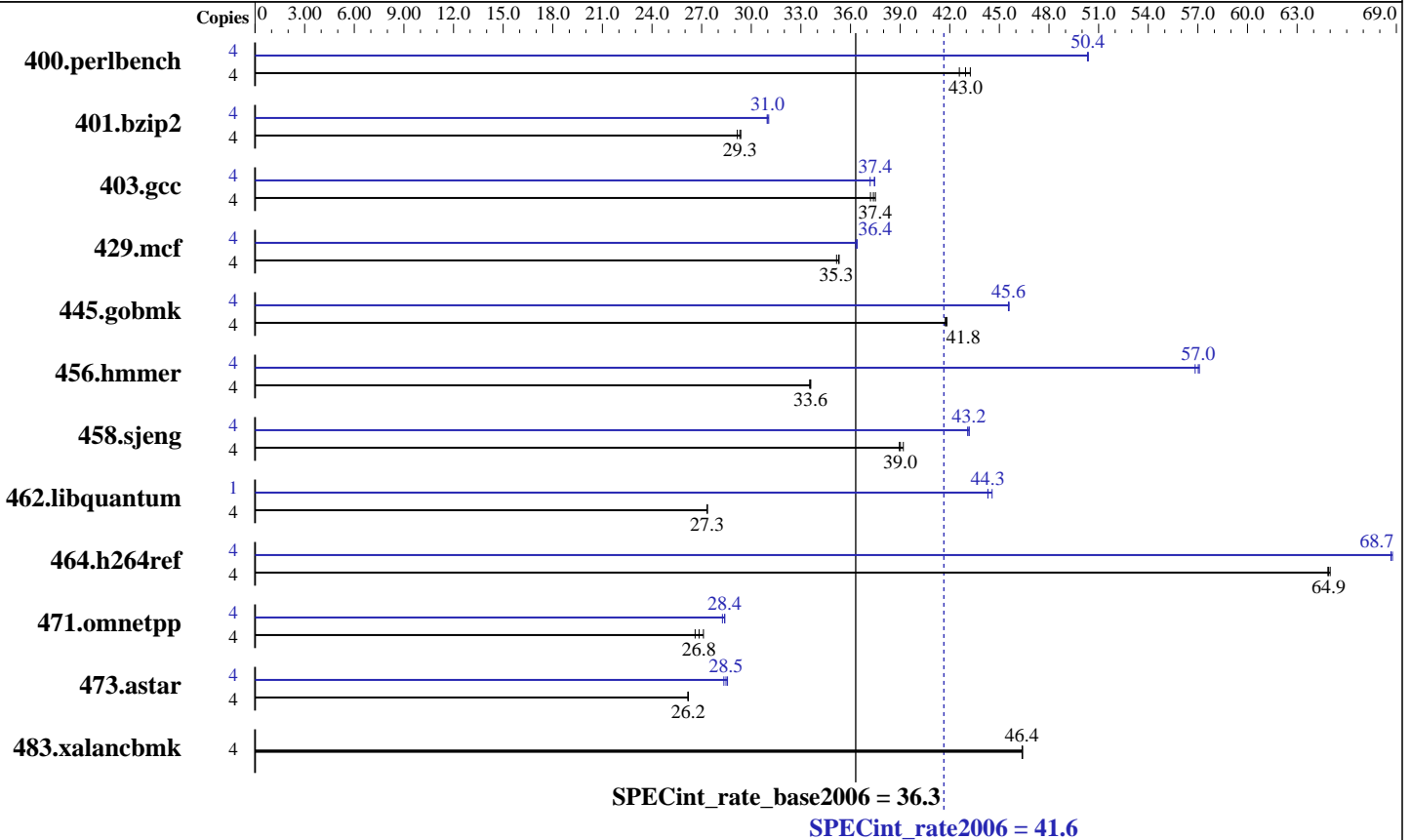
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Feb-2008

Hardware Availability: Mar-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5310  
 CPU Characteristics: 1.60 GHz, 8 MB L2, 1066 MHz system bus  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 to 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (8x1 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 SP1  
 Kernel 2.6.16.46-0.12-smp for x86\_64  
 Compiler: Intel C++ Compiler for Linux32 and Linux64  
 version 10.1  
 Build 20070725  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user run level 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap library V8.1  
 Binutils 2.17.50.0.15



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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	4	<b>910</b>	<b>43.0</b>	904	43.2	918	42.6	4	777	50.3	<b>776</b>	<b>50.4</b>	776	50.4
401.bzip2	4	1324	29.2	<b>1317</b>	<b>29.3</b>	1314	29.4	4	<b>1245</b>	<b>31.0</b>	1243	31.1	1247	31.0
403.gcc	4	865	37.2	<b>861</b>	<b>37.4</b>	859	37.5	4	866	37.2	860	37.5	<b>860</b>	<b>37.4</b>
429.mcf	4	<b>1034</b>	<b>35.3</b>	1038	35.2	1033	35.3	4	1002	36.4	<b>1003</b>	<b>36.4</b>	1004	36.3
445.gobmk	4	1003	41.8	1006	41.7	<b>1004</b>	<b>41.8</b>	4	921	45.5	<b>921</b>	<b>45.6</b>	920	45.6
456.hammer	4	1111	33.6	1113	33.5	<b>1111</b>	<b>33.6</b>	4	<b>654</b>	<b>57.0</b>	654	57.1	657	56.8
458.sjeng	4	<b>1240</b>	<b>39.0</b>	1235	39.2	1243	38.9	4	1121	43.2	1123	43.1	<b>1121</b>	<b>43.2</b>
462.libquantum	4	3032	27.3	3031	27.3	<b>3032</b>	<b>27.3</b>	1	465	44.6	468	44.3	<b>468</b>	<b>44.3</b>
464.h264ref	4	1362	65.0	<b>1364</b>	<b>64.9</b>	1365	64.9	4	1289	68.7	<b>1289</b>	<b>68.7</b>	1287	68.8
471.omnetpp	4	922	27.1	<b>931</b>	<b>26.8</b>	940	26.6	4	885	28.3	880	28.4	<b>880</b>	<b>28.4</b>
473.astar	4	1073	26.2	1072	26.2	<b>1072</b>	<b>26.2</b>	4	991	28.3	<b>986</b>	<b>28.5</b>	983	28.6
483.xalanbmk	4	595	46.4	<b>595</b>	<b>46.4</b>	595	46.4	4	595	46.4	<b>595</b>	<b>46.4</b>	595	46.4

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

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hammer for peak, are compiled in 64-bit mode  
OMP\_NUM\_THREADS set to number of cores (default)

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

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



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## Base Optimization Flags

C benchmarks:  
-fast -inline-calloc -opt-malloc-options=3  
C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc  
401.bzip2: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
456.hmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/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

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

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.hmmr: -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/home/cmplr/usr3/alrahate/cpu2006.1.0/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/home/cmplr/usr3/alrahate/cpu2006.1.0/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/Intel-ic10.1-FP-intel64-linux-flags.20090714.16.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.16.xml>

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

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