



# SPEC® CINT2006 Result

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## Bull SAS

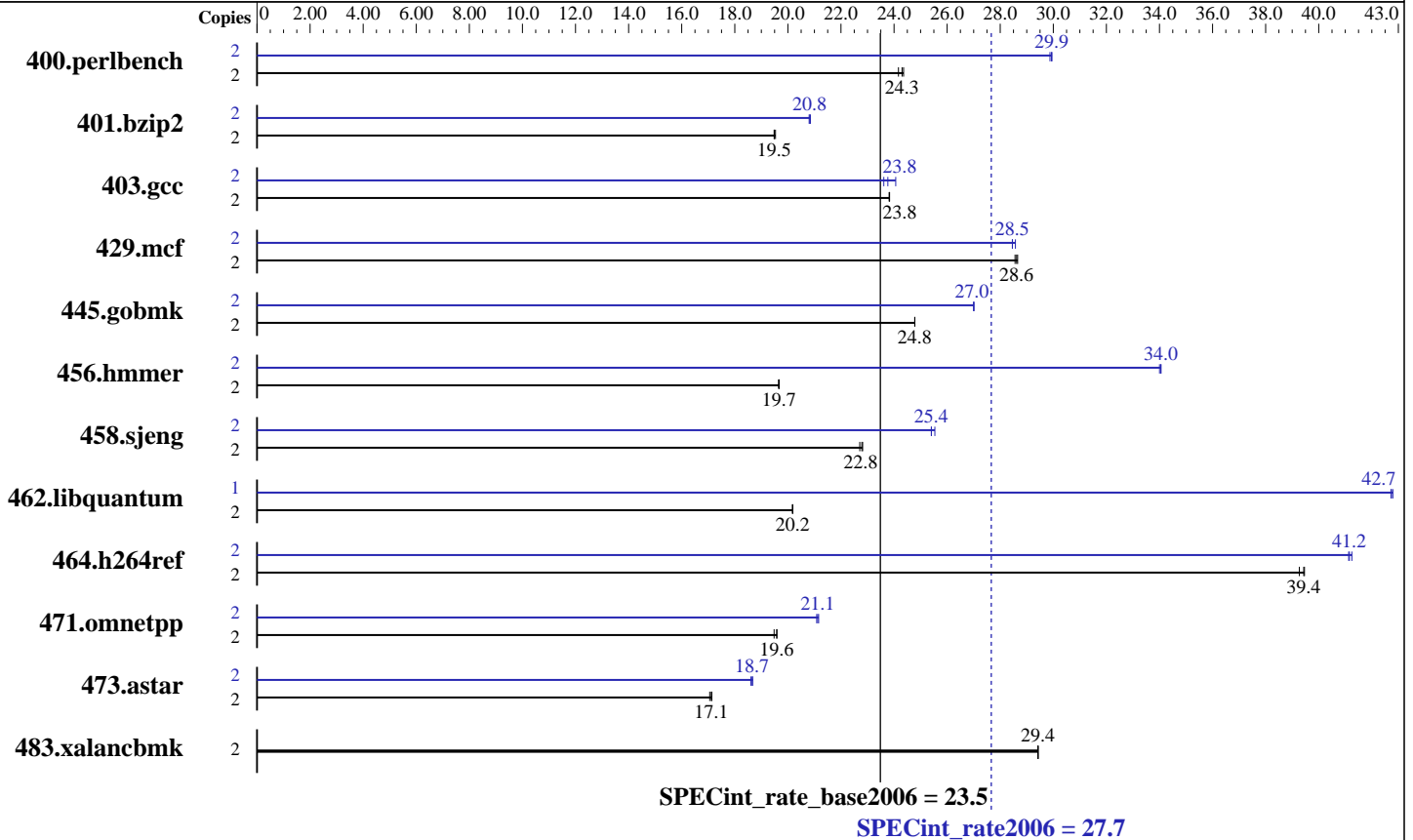
NovaScale R440 E1  
(Intel Xeon E5205, 1.86 GHz)

SPECint®\_rate2006 = 27.7

SPECint\_rate\_base2006 = 23.5

CPU2006 license: 20  
Test sponsor: Bull SAS  
Tested by: NEC Corporation

Test date: Jun-2008  
Hardware Availability: Apr-2008  
Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5205  
CPU Characteristics: 1.86 GHz, 6 MB L2, 1066 MHz bus  
CPU MHz: 1867  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
CPU(s) orderable: 1,2 chips  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 6 MB I+D on chip per chip  
L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x73.2 GB SAS, 15000RPM  
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 for Linux version 10.1 Build 20070913 Package ID: l\_cc\_p\_10.1.008  
Auto Parallel: Yes  
File System: ReiserFS  
System State: Run level 3 (multi-user)  
Base Pointers: 32-bit  
Peak Pointers: 32/64-bit  
Other Software: MicroQuill SmartHeap library 8.1  
binutils 2.17



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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	2	802	24.4	<b>804</b>	<b>24.3</b>	809	24.2	2	<b>653</b>	<b>29.9</b>	652	30.0	654	29.9
401.bzip2	2	991	19.5	988	19.5	<b>990</b>	<b>19.5</b>	2	928	20.8	926	20.9	<b>927</b>	<b>20.8</b>
403.gcc	2	676	23.8	676	23.8	<b>676</b>	<b>23.8</b>	2	669	24.1	<b>677</b>	<b>23.8</b>	682	23.6
429.mcf	2	<b>637</b>	<b>28.6</b>	639	28.6	637	28.7	2	638	28.6	641	28.5	<b>641</b>	<b>28.5</b>
445.gobmk	2	847	24.8	846	24.8	<b>847</b>	<b>24.8</b>	2	<b>777</b>	<b>27.0</b>	777	27.0	777	27.0
456.hmmer	2	<b>949</b>	<b>19.7</b>	950	19.6	949	19.7	2	549	34.0	<b>548</b>	<b>34.0</b>	548	34.1
458.sjeng	2	<b>1062</b>	<b>22.8</b>	1061	22.8	1066	22.7	2	953	25.4	<b>953</b>	<b>25.4</b>	948	25.5
462.libquantum	2	2054	20.2	2053	20.2	<b>2054</b>	<b>20.2</b>	1	<b>485</b>	<b>42.7</b>	484	42.8	485	42.7
464.h264ref	2	1127	39.3	1122	39.5	<b>1122</b>	<b>39.4</b>	2	<b>1075</b>	<b>41.2</b>	1076	41.1	1073	41.2
471.omnetpp	2	638	19.6	<b>638</b>	<b>19.6</b>	642	19.5	2	593	21.1	<b>592</b>	<b>21.1</b>	591	21.2
473.astar	2	823	17.1	819	17.1	<b>820</b>	<b>17.1</b>	2	752	18.7	755	18.6	<b>753</b>	<b>18.7</b>
483.xalancbmk	2	469	29.4	<b>469</b>	<b>29.4</b>	469	29.4	2	469	29.4	<b>469</b>	<b>29.4</b>	469	29.4

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  
OMP\_NUM\_THREADS set to number of cores

## Platform Notes

Bios settings:  
Hardware Prefetcher: Enabled  
Adjacent Cache Line Prefetch: Enabled  
Intel SpeedStep Technology: Disabled

## General Notes

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

The NEC Express5800/120Rh-1(Intel Xeon E5205), the NEC Express5800/120Rj-2(Intel Xeon E5205), the Bull NovaScale R440 E1 (Intel Xeon E5205,1.86GHz) and the Bull NovaScale R460 E1 (Intel Xeon E5205,1.86GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon E5205) model.

## Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc

## 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/opt/SmartHeap\_8.1/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



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## 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:

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/opt/SmartHeap\_8.1/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/opt/SmartHeap\_8.1/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/NEC-Intel-ic10.1-INT-ia32-linux-flags.html>

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

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.xml>

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

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