



# SPEC® CINT2006 Result

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## Bull SAS

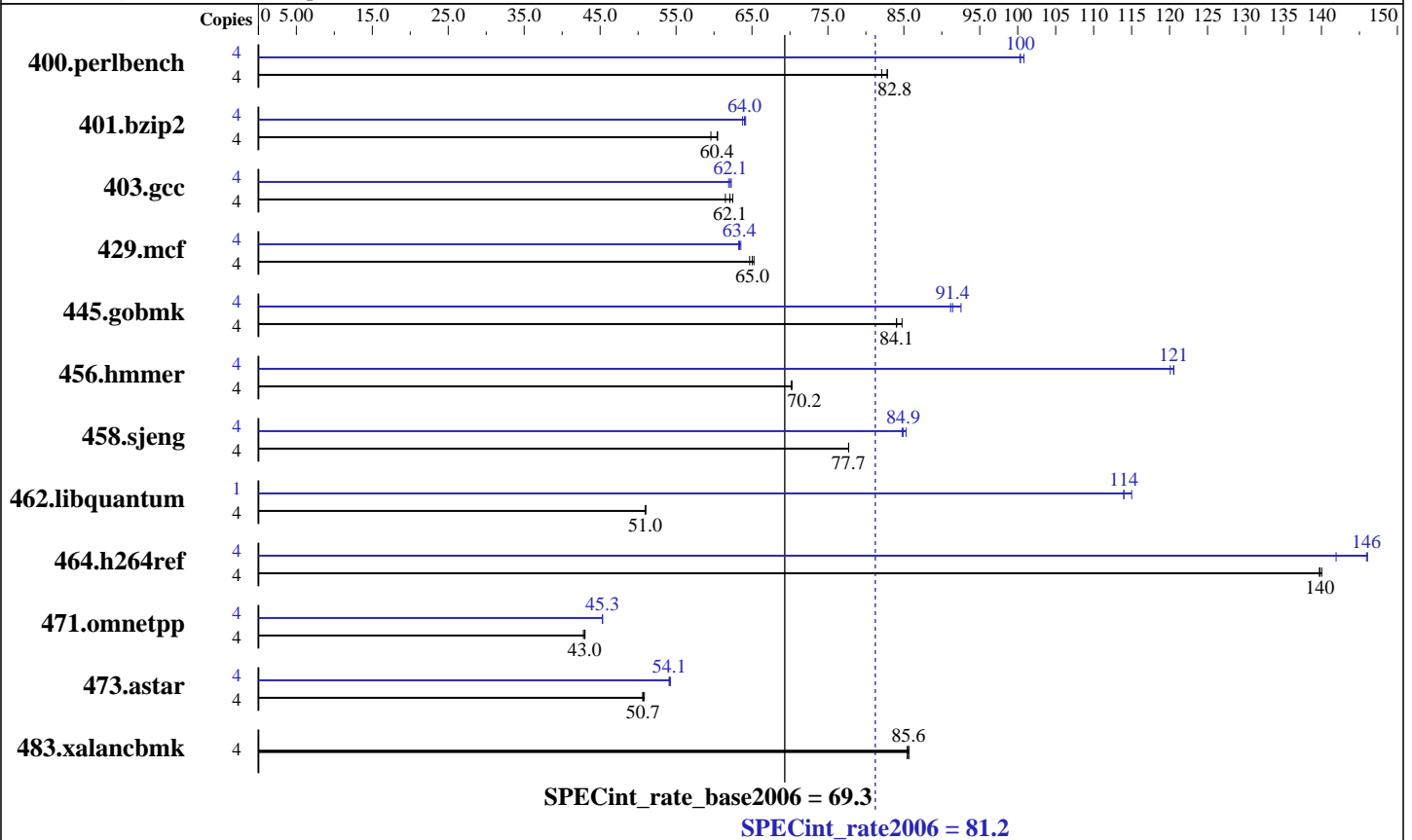
NovaScale R460 E1  
(Intel Xeon X5260,3.33GHz)

SPECint®\_rate2006 = 81.2

SPECint\_rate\_base2006 = 69.3

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

Test date: Feb-2008  
Hardware Availability: Jan-2008  
Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5260  
 CPU Characteristics: 3.33 GHz, 6 MB L2, 1333 MHz bus  
 CPU MHz: 3333  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 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: 12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x146.5 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 Linux32 and Linux64 version 10.1 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: MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 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	4	472	82.8	476	82.1	<u>472</u>	<u>82.8</u>	4	388	101	390	100	<u>389</u>	<u>100</u>
401.bzip2	4	648	59.6	<u>639</u>	<u>60.4</u>	638	60.5	4	<u>603</u>	<u>64.0</u>	602	64.2	605	63.8
403.gcc	4	524	61.5	515	62.5	<u>519</u>	<u>62.1</u>	4	517	62.3	<u>518</u>	<u>62.1</u>	520	61.9
429.mcf	4	564	64.7	559	65.3	<u>561</u>	<u>65.0</u>	4	574	63.5	<u>576</u>	<u>63.4</u>	577	63.3
445.gobmk	4	<u>499</u>	<u>84.1</u>	495	84.8	499	84.0	4	<u>459</u>	<u>91.4</u>	460	91.2	453	92.5
456.hammer	4	<u>531</u>	<u>70.2</u>	532	70.2	531	70.2	4	<u>310</u>	<u>121</u>	311	120	310	121
458.sjeng	4	623	77.7	<u>623</u>	<u>77.7</u>	623	77.7	4	571	84.8	<u>570</u>	<u>84.9</u>	567	85.3
462.libquantum	4	1624	51.0	1627	51.0	<u>1626</u>	<u>51.0</u>	1	180	115	<u>182</u>	<u>114</u>	182	114
464.h264ref	4	633	140	<u>633</u>	<u>140</u>	632	140	4	606	146	<u>607</u>	<u>146</u>	624	142
471.omnetpp	4	581	43.0	584	42.8	<u>582</u>	<u>43.0</u>	4	552	45.3	<u>552</u>	<u>45.3</u>	552	45.3
473.astar	4	555	50.6	<u>554</u>	<u>50.7</u>	552	50.8	4	519	54.1	518	54.3	<u>519</u>	<u>54.1</u>
483.xalancbmk	4	<u>322</u>	<u>85.6</u>	323	85.4	322	85.7	4	<u>322</u>	<u>85.6</u>	323	85.4	322	85.7

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:  
Intel SpeedStep Technology: Disabled

## General Notes

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

The NEC Express5800/120Rh-1(Intel Xeon Processor X5260),  
the NEC Express5800/120Rj-2(Intel Xeon Processor X5260),  
the Bull NovaScale R440 E1 (Intel Xeon X5260,3.33GHz) and  
the Bull NovaScale R460 E1 (Intel Xeon X5260,3.33GHz) models are electronically equivalent.  
The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon Processor X5260) 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 -lsmarheap

## 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-FP-intel64-linux-flags.20090713.01.html>

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

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.01.xml>

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

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