



# SPEC<sup>®</sup> CINT2006 Result

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## Bull SAS

NovaScale R460 E1  
(Intel Xeon X5260,3.33GHz)

SPECint<sup>®</sup>2006 = 27.0

SPECint\_base2006 = 22.6

CPU2006 license: 20

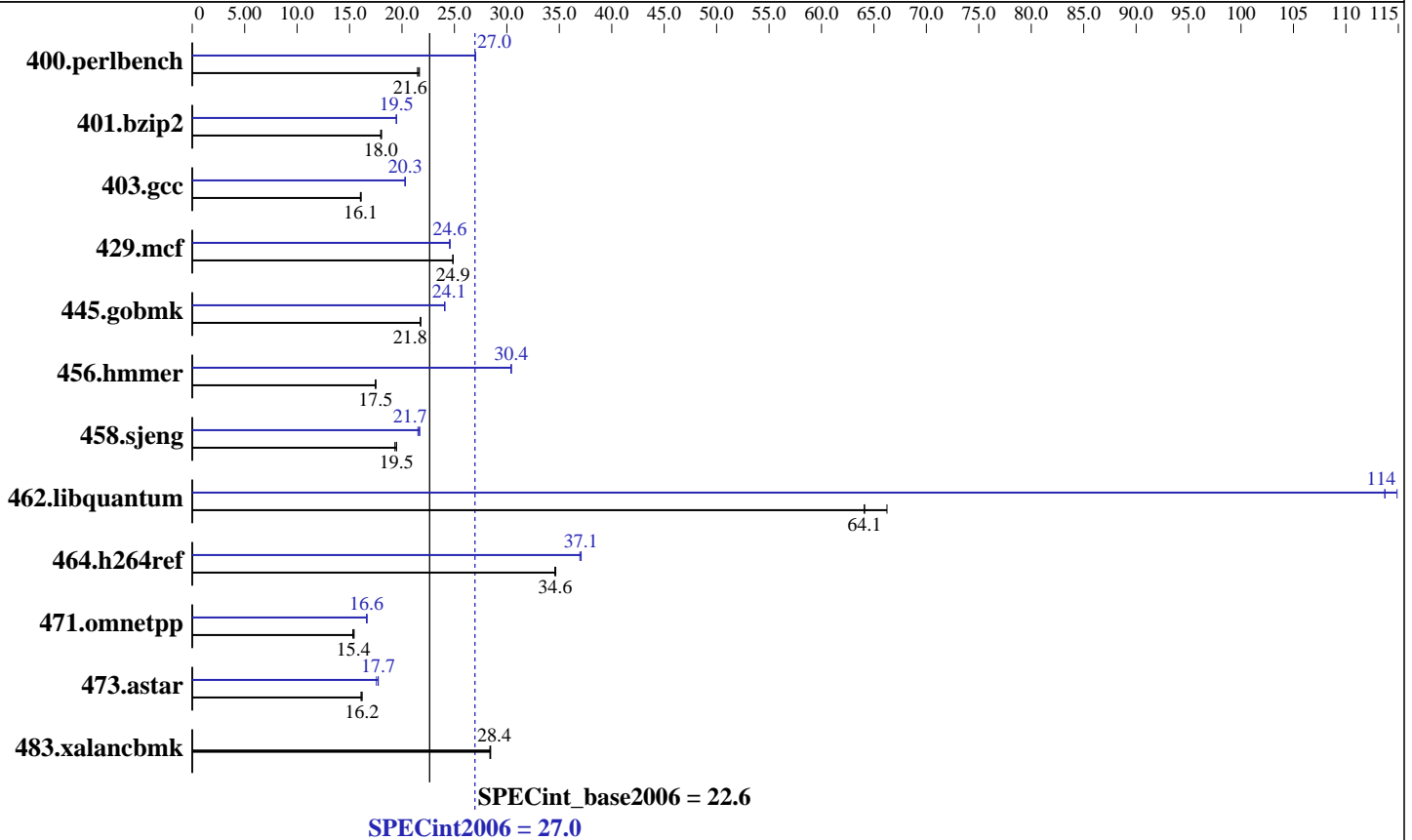
Test sponsor: Bull SAS

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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	451	21.7	<b><u>453</u></b>	<b><u>21.6</u></b>	455	21.5	<b><u>362</u></b>	<b><u>27.0</u></b>	<b><u>362</u></b>	<b><u>27.0</u></b>	362	27.0
401.bzip2	534	18.1	<b><u>536</u></b>	<b><u>18.0</u></b>	537	18.0	<b><u>496</u></b>	<b><u>19.5</u></b>	496	19.5	495	19.5
403.gcc	500	16.1	502	16.0	<b><u>501</u></b>	<b><u>16.1</u></b>	397	20.3	396	20.3	<b><u>396</u></b>	<b><u>20.3</u></b>
429.mcf	<b><u>367</u></b>	<b><u>24.9</u></b>	367	24.9	367	24.9	<b><u>371</u></b>	<b><u>24.6</u></b>	371	24.6	371	24.6
445.gobmk	<b><u>482</u></b>	<b><u>21.8</u></b>	482	21.7	482	21.8	436	24.1	436	24.1	<b><u>436</u></b>	<b><u>24.1</u></b>
456.hmmer	533	17.5	534	17.5	<b><u>533</u></b>	<b><u>17.5</u></b>	307	30.4	<b><u>307</u></b>	<b><u>30.4</u></b>	307	30.4
458.sjeng	621	19.5	<b><u>622</u></b>	<b><u>19.5</u></b>	626	19.3	558	21.7	562	21.5	<b><u>559</u></b>	<b><u>21.7</u></b>
462.libquantum	313	66.2	<b><u>323</u></b>	<b><u>64.1</u></b>	323	64.1	<b><u>182</u></b>	<b><u>114</u></b>	182	114	180	115
464.h264ref	640	34.6	638	34.7	<b><u>639</u></b>	<b><u>34.6</u></b>	<b><u>597</u></b>	<b><u>37.1</u></b>	597	37.1	599	37.0
471.omnetpp	405	15.4	<b><u>406</u></b>	<b><u>15.4</u></b>	408	15.3	<b><u>376</u></b>	<b><u>16.6</u></b>	376	16.6	375	16.7
473.astar	<b><u>434</u></b>	<b><u>16.2</u></b>	434	16.2	436	16.1	400	17.6	396	17.7	<b><u>396</u></b>	<b><u>17.7</u></b>
483.xalancbmk	243	28.4	<b><u>243</u></b>	<b><u>28.4</u></b>	243	28.4	<b><u>243</u></b>	<b><u>28.4</u></b>	<b><u>243</u></b>	<b><u>28.4</u></b>	243	28.4

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:  
Intel SpeedStep Technology: Disabled

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer, 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 -vec-guard-write -parallel -par-runtime-control

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  
-auto-ilp32  
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  
-auto-ilp32  
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 -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/opt/SmartHeap\_8.1/lib -lsmartheap  
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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