



# SPEC® CINT2006 Result

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## Bull SAS

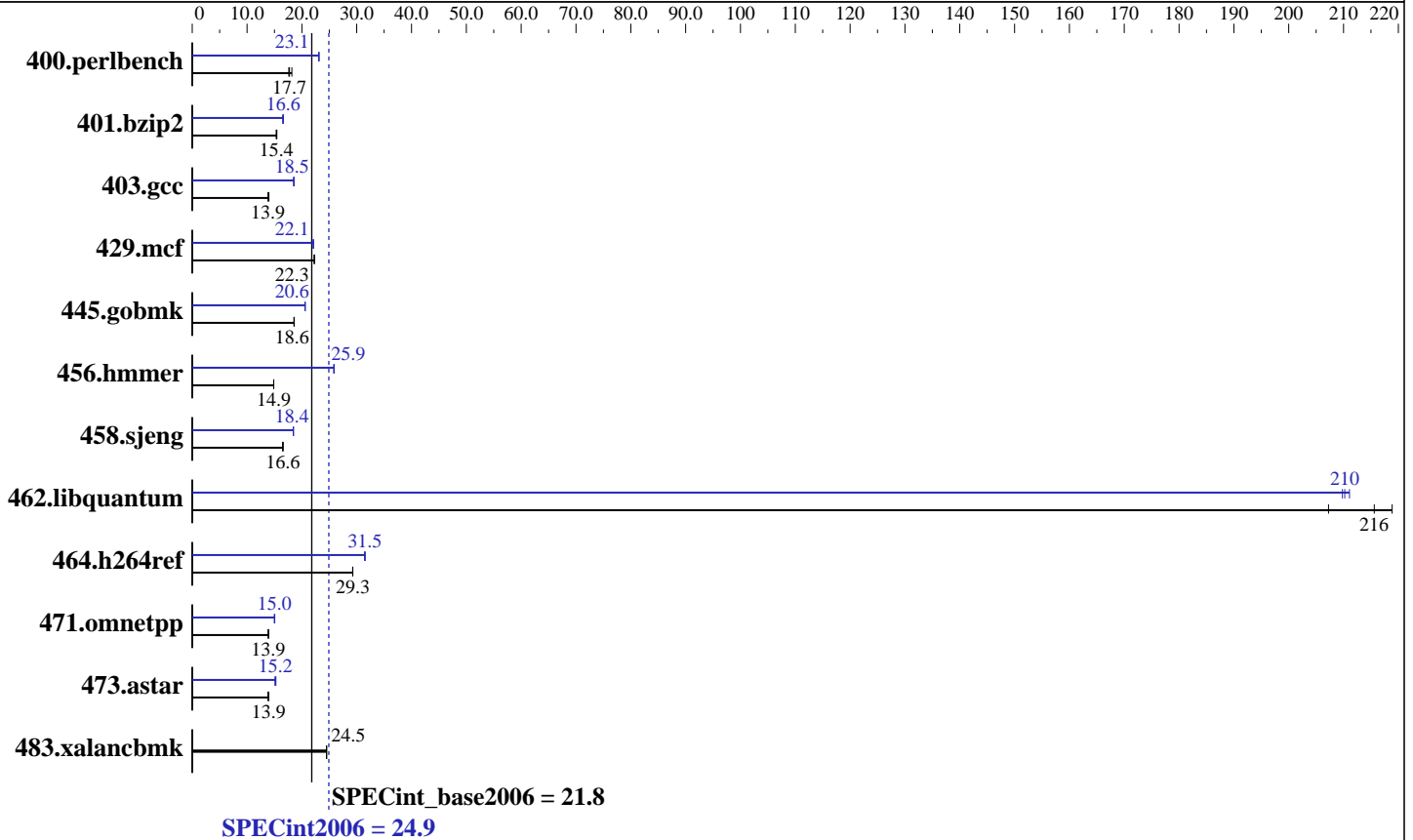
NovaScale T860 E1  
(Intel Xeon E5440,2.83GHz)

SPECint®2006 = 24.9

SPECint\_base2006 = 21.8

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

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



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics: 2.83 GHz, 2x6 MB L2 shared, 1333 MHz bus  
 CPU MHz: 2833  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 12 GB (12x1 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 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	538	18.2	555	17.6	<u>551</u>	<u>17.7</u>	423	23.1	<u>423</u>	<u>23.1</u>	422	23.1
401.bzip2	625	15.4	<u>628</u>	<u>15.4</u>	630	15.3	585	16.5	580	16.6	<u>581</u>	<u>16.6</u>
403.gcc	575	14.0	<u>581</u>	<u>13.9</u>	581	13.8	435	18.5	<u>434</u>	<u>18.5</u>	434	18.6
429.mcf	408	22.3	410	22.2	<u>410</u>	<u>22.3</u>	<u>413</u>	<u>22.1</u>	413	22.1	412	22.1
445.gobmk	<u>564</u>	<u>18.6</u>	565	18.6	564	18.6	510	20.6	<u>510</u>	<u>20.6</u>	509	20.6
456.hmmer	628	14.9	<u>628</u>	<u>14.9</u>	627	14.9	<u>361</u>	<u>25.9</u>	361	25.9	361	25.8
458.sjeng	730	16.6	734	16.5	<u>731</u>	<u>16.6</u>	657	18.4	<u>656</u>	<u>18.4</u>	655	18.5
462.libquantum	100	207	94.7	219	<u>96.1</u>	<u>216</u>	98.2	211	<u>98.6</u>	<u>210</u>	98.8	210
464.h264ref	756	29.3	755	29.3	<u>756</u>	<u>29.3</u>	704	31.4	<u>702</u>	<u>31.5</u>	702	31.5
471.omnetpp	450	13.9	<u>450</u>	<u>13.9</u>	451	13.9	415	15.1	<u>416</u>	<u>15.0</u>	417	15.0
473.astar	503	14.0	<u>504</u>	<u>13.9</u>	508	13.8	<u>462</u>	<u>15.2</u>	465	15.1	460	15.3
483.xalancbmk	281	24.5	<u>282</u>	<u>24.5</u>	282	24.5	281	24.5	<u>282</u>	<u>24.5</u>	282	24.5

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 Express5800/120Lj(Intel Xeon E5440) and the Bull NovaScale T860 E1(Intel Xeon E5440,2.83GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Lj(Intel Xeon E5440) model.

## 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 -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

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

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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  
-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.hmmmer: -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-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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