



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale R440 E1  
(Intel Xeon E5430, 2.66 GHz)

SPECint®2006 = 24.1

SPECint\_base2006 = 21.2

CPU2006 license: 20

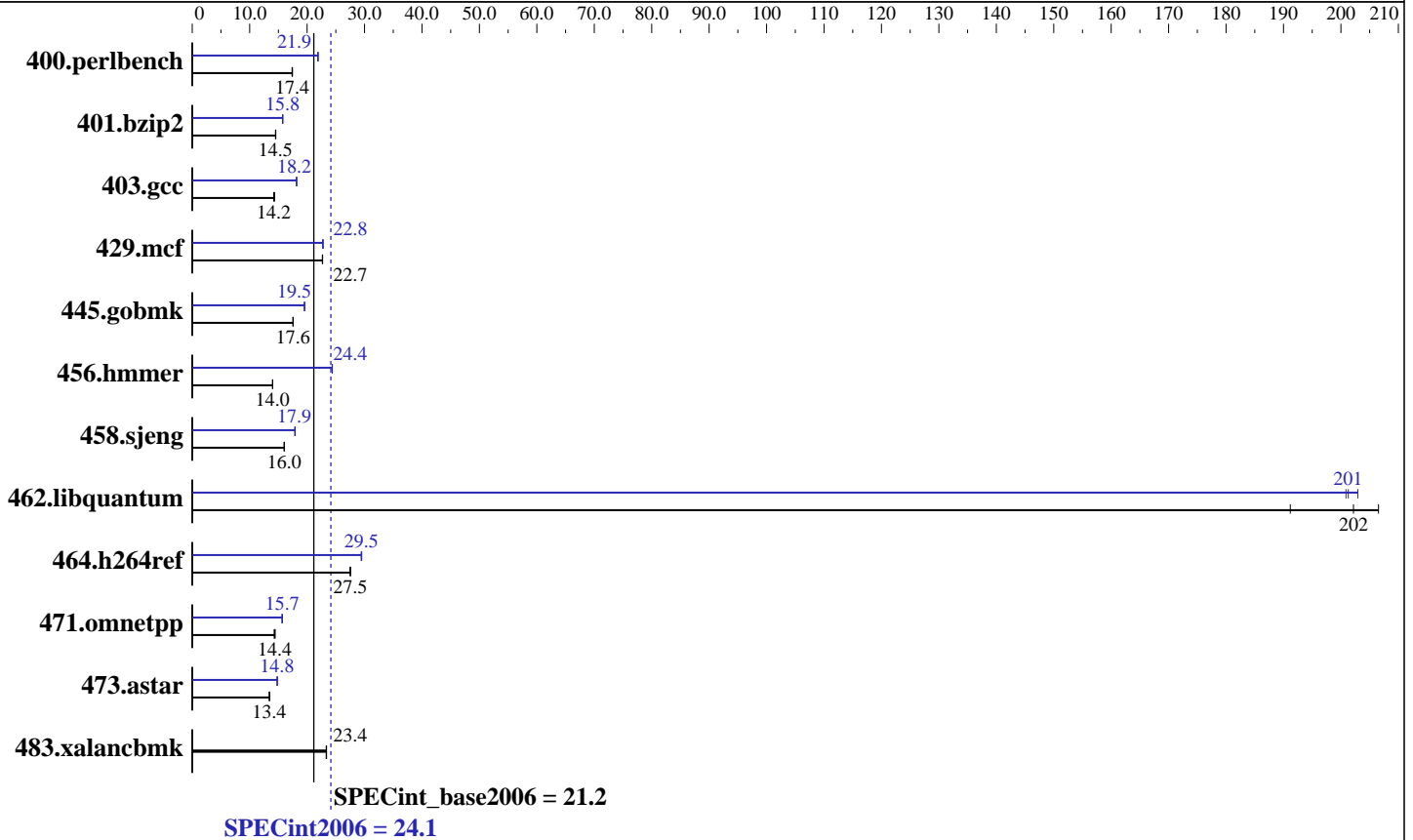
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: May-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5430  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2666  
 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: 16 GB (8x2 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 10.1 for Linux  
 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: Binutils 2.17.50.0.15  
 SmartHeap library V8.1



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	560	17.4	<b>560</b>	<b>17.4</b>	562	17.4	<b>446</b>	<b>21.9</b>	447	21.9	446	21.9
401.bzip2	663	14.6	666	14.5	<b>665</b>	<b>14.5</b>	<b>612</b>	<b>15.8</b>	614	15.7	612	15.8
403.gcc	<b>566</b>	<b>14.2</b>	561	14.3	567	14.2	443	18.2	444	18.1	<b>443</b>	<b>18.2</b>
429.mcf	<b>402</b>	<b>22.7</b>	402	22.7	403	22.7	400	22.8	401	22.7	<b>400</b>	<b>22.8</b>
445.gobmk	598	17.6	597	17.6	<b>597</b>	<b>17.6</b>	<b>537</b>	<b>19.5</b>	536	19.6	537	19.5
456.hmmmer	<b>667</b>	<b>14.0</b>	666	14.0	667	14.0	382	24.4	383	24.4	<b>383</b>	<b>24.4</b>
458.sjeng	<b>755</b>	<b>16.0</b>	754	16.0	756	16.0	<b>676</b>	<b>17.9</b>	676	17.9	677	17.9
462.libquantum	108	191	<b>102</b>	<b>202</b>	100	207	<b>103</b>	<b>201</b>	102	203	103	201
464.h264ref	805	27.5	803	27.6	<b>803</b>	<b>27.5</b>	752	29.4	<b>751</b>	<b>29.5</b>	750	29.5
471.omnetpp	438	14.3	433	14.4	<b>435</b>	<b>14.4</b>	399	15.7	399	15.7	<b>399</b>	<b>15.7</b>
473.astar	<b>522</b>	<b>13.4</b>	524	13.4	520	13.5	475	14.8	<b>474</b>	<b>14.8</b>	474	14.8
483.xalancbmk	<b>295</b>	<b>23.4</b>	296	23.3	295	23.4	<b>295</b>	<b>23.4</b>	296	23.3	295	23.4

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
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to null
```

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode  
The Bull NovaScale R440 E1 (Intel Xeon E5430, 2.66 GHz) and the Bull NovaScale R460 E1 (Intel Xeon E5430, 2.66 GHz) models are electronically equivalent.  
The results have been measured on a Bull NovaScale R460 E1 (Intel Xeon E5430, 2.66 GHz) 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/spec/cpu2006/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.xalanbmk: -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/spec/cpu2006/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/spec/cpu2006/lib -lsmarheap

483.xalanbmk: basepeak = yes



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## Peak Other Flags

Same as Base Other Flags

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/EM64T\\_Intel101\\_int\\_flags.20090713.00.html](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.00.html)

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

[http://www.spec.org/cpu2006/flags/EM64T\\_Intel101\\_int\\_flags.20090713.00.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.00.xml)

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

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