



# SPEC® CINT2006 Result

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## Bull SAS

**SPECint®2006 = 27.8**

NovaScale R410 F2 (Intel Xeon X3440, 2.53 GHz)

**SPECint\_base2006 = 24.0**

CPU2006 license: 20

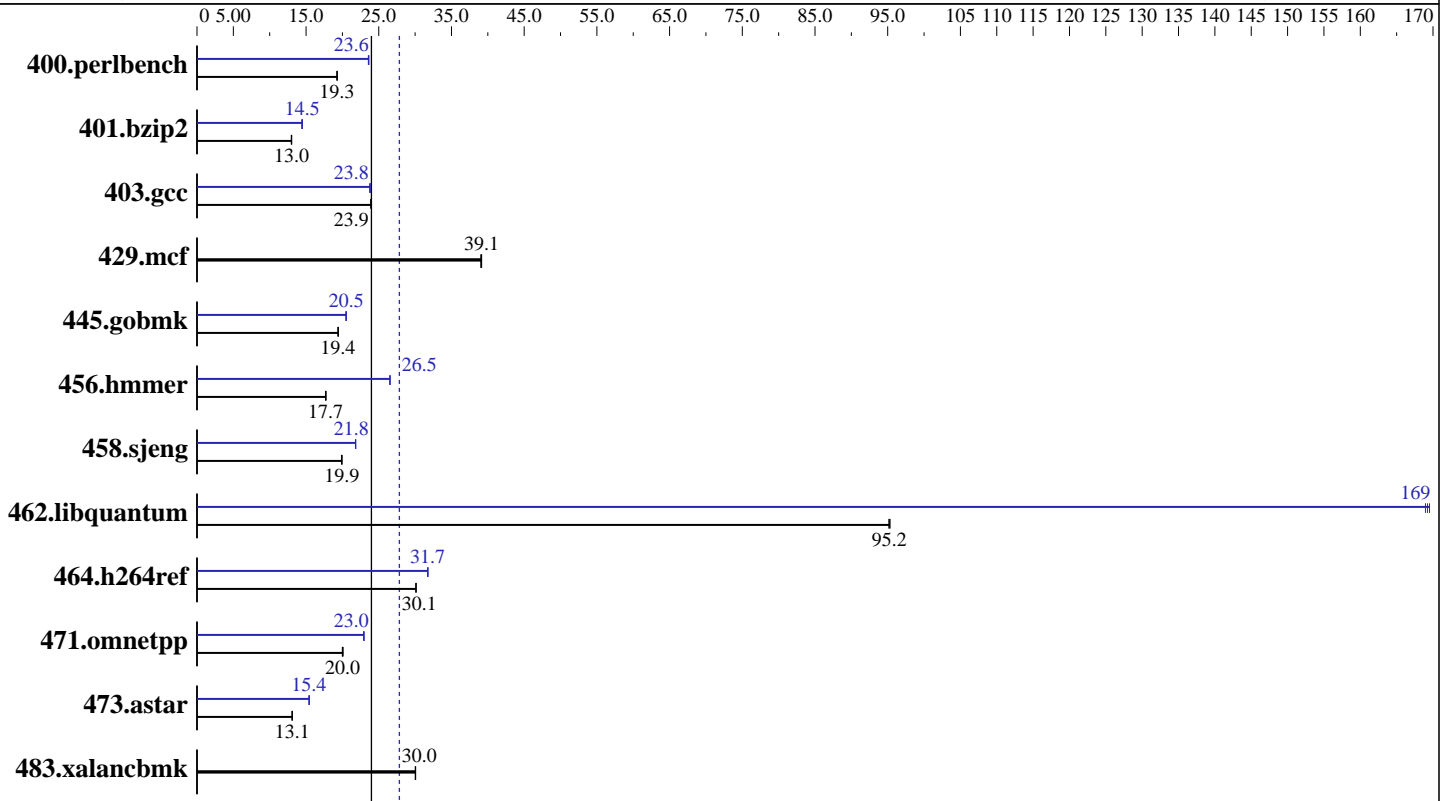
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Sep-2009

Hardware Availability: Dec-2009

Software Availability: Jul-2009



### Hardware

CPU Name: Intel Xeon X3440  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2533  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (4 x 2 GB DDR3-1333 DR UDIMM)  
 Disk Subsystem: 1 x 160 GB 7200 RPM SATA  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5  
 Compiler: Intel C++ Compiler Professional Edition 11.1 for Linux  
 Build 20090511 Package ID: l\_cproc\_p\_11.1.040  
 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 V8.1  
 Binutils 2.18.50.0.7.20080502



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>507</b>	<b>19.3</b>	506	19.3	508	19.2	413	23.6	<b>414</b>	<b>23.6</b>	415	23.6
401.bzip2	744	13.0	<b>742</b>	<b>13.0</b>	741	13.0	666	14.5	<b>667</b>	<b>14.5</b>	670	14.4
403.gcc	<b>336</b>	<b>23.9</b>	337	23.9	336	24.0	<b>338</b>	<b>23.8</b>	338	23.8	339	23.8
429.mcf	234	39.0	<b>233</b>	<b>39.1</b>	233	39.1	234	39.0	<b>233</b>	<b>39.1</b>	233	39.1
445.gobmk	541	19.4	<b>540</b>	<b>19.4</b>	539	19.4	<b>511</b>	<b>20.5</b>	512	20.5	511	20.5
456.hammer	527	17.7	526	17.7	<b>527</b>	<b>17.7</b>	351	26.6	<b>351</b>	<b>26.5</b>	352	26.5
458.sjeng	606	20.0	609	19.9	<b>607</b>	<b>19.9</b>	<b>554</b>	<b>21.8</b>	554	21.8	555	21.8
462.libquantum	217	95.3	218	95.2	<b>218</b>	<b>95.2</b>	122	170	123	169	<b>122</b>	<b>169</b>
464.h264ref	735	30.1	734	30.1	<b>735</b>	<b>30.1</b>	<b>697</b>	<b>31.7</b>	697	31.7	697	31.8
471.omnetpp	311	20.1	<b>312</b>	<b>20.0</b>	313	20.0	272	23.0	273	22.9	<b>272</b>	<b>23.0</b>
473.astar	537	13.1	536	13.1	<b>536</b>	<b>13.1</b>	454	15.5	<b>455</b>	<b>15.4</b>	456	15.4
483.xalancbmk	<b>230</b>	<b>30.0</b>	230	30.0	229	30.1	<b>230</b>	<b>30.0</b>	230	30.0	229	30.1

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

## Platform Notes

BIOS Settings:  
Power Management = Maximum Performance (Default = Active Power Controller)

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
The Dell PowerEdge R210 (Intel Xeon X3440, 2.53 GHz) and  
the Bull NovaScale R410 F2 (Intel Xeon X3440, 2.53 GHz) models are electronically equivalent.  
The results have been measured on a Dell PowerEdge R210 (Intel Xeon X3440, 2.53 GHz) model.

## Base Compiler Invocation

C benchmarks:  
icc -m32

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -inline-calloc  
-opt-malloc-options=3

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/spec/cpu2006.1.1/lib -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32  
  
401.bzip2: icc -m64  
456.hmmer: icc -m64  
458.sjeng: icc -m64  
  
C++ benchmarks (except as noted below):  
icpc -m32  
  
473.astar: icpc -m64



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## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -ansi-alias -opt-prefetch  
401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -auto-ilp32 -opt-prefetch  
403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3  
429.mcf: basepeak = yes  
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
-ipo -no-prec-div -ansi-alias  
456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias -auto-ilp32  
458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll4 -auto-ilp32  
462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel  
-par-runtime-control -opt-prefetch -inline-calloc  
-opt-malloc-options=3  
464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/spec/cpu2006.1.1/lib -lsmartheap

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## Peak Optimization Flags (Continued)

```
473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
          -ansi-alias -opt-ra-region-strategy=routine -auto-ilp32
          -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64
```

```
483.xalancbmk: basepeak = yes
```

## 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/Intel-ic11.1-int-linux64-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revA.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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