



# SPEC® CINT2006 Result

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## Bull SAS

**SPECint®2006 = 32.6**

NovaScale T810 F2 (Intel Xeon X3470, 2.93 GHz)

**SPECint\_base2006 = 28.2**

CPU2006 license: 20

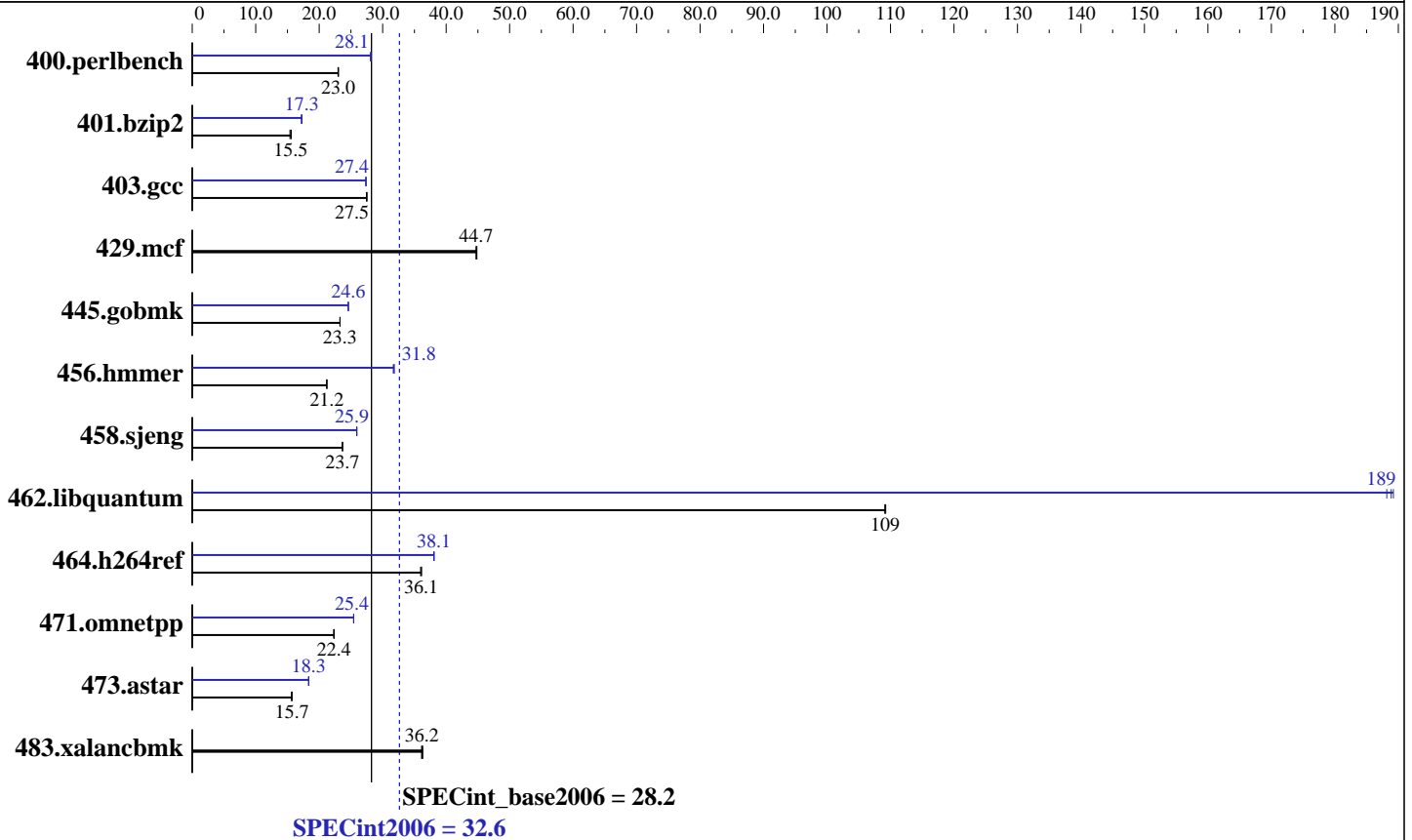
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Sep-2009

Hardware Availability: Dec-2009

Software Availability: Jul-2009



### Hardware

CPU Name: Intel Xeon X3470  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2933  
 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	424	23.0	<b>424</b>	<b>23.0</b>	425	23.0	347	28.1	<b>347</b>	<b>28.1</b>	348	28.1
401.bzip2	627	15.4	619	15.6	<b>622</b>	<b>15.5</b>	558	17.3	<b>559</b>	<b>17.3</b>	562	17.2
403.gcc	<b>293</b>	<b>27.5</b>	292	27.5	293	27.5	294	27.4	<b>294</b>	<b>27.4</b>	294	27.4
429.mcf	<b>204</b>	<b>44.7</b>	203	44.8	204	44.7	<b>204</b>	<b>44.7</b>	203	44.8	204	44.7
445.gobmk	<b>451</b>	<b>23.3</b>	451	23.3	450	23.3	426	24.6	<b>427</b>	<b>24.6</b>	427	24.6
456.hammer	440	21.2	440	21.2	<b>440</b>	<b>21.2</b>	293	31.8	<b>293</b>	<b>31.8</b>	295	31.7
458.sjeng	511	23.7	<b>511</b>	<b>23.7</b>	512	23.7	467	25.9	467	25.9	<b>467</b>	<b>25.9</b>
462.libquantum	190	109	<b>190</b>	<b>109</b>	190	109	110	189	110	188	<b>110</b>	<b>189</b>
464.h264ref	615	36.0	613	36.1	<b>613</b>	<b>36.1</b>	<b>581</b>	<b>38.1</b>	582	38.1	581	38.1
471.omnetpp	281	22.3	279	22.4	<b>280</b>	<b>22.4</b>	246	25.4	246	25.4	<b>246</b>	<b>25.4</b>
473.astar	<b>447</b>	<b>15.7</b>	449	15.6	447	15.7	382	18.4	<b>383</b>	<b>18.3</b>	383	18.3
483.xalancbmk	191	36.1	<b>191</b>	<b>36.2</b>	190	36.3	191	36.1	<b>191</b>	<b>36.2</b>	190	36.3

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 T110 (Intel Xeon X3470, 2.93 GHz) and  
the Bull NovaScale T810 F2 (Intel Xeon X3470, 2.93 GHz) models are electronically equivalent.  
The results have been measured on a Dell PowerEdge T110 (Intel Xeon X3470, 2.93 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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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