



# SPEC® CINT2006 Result

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## Bull SAS

### SPECint®\_rate2006 = 118

NovaScale T810B F2 (Intel Xeon E3-1220, 3.10 GHz)

### SPECint\_rate\_base2006 = 123

CPU2006 license: 20

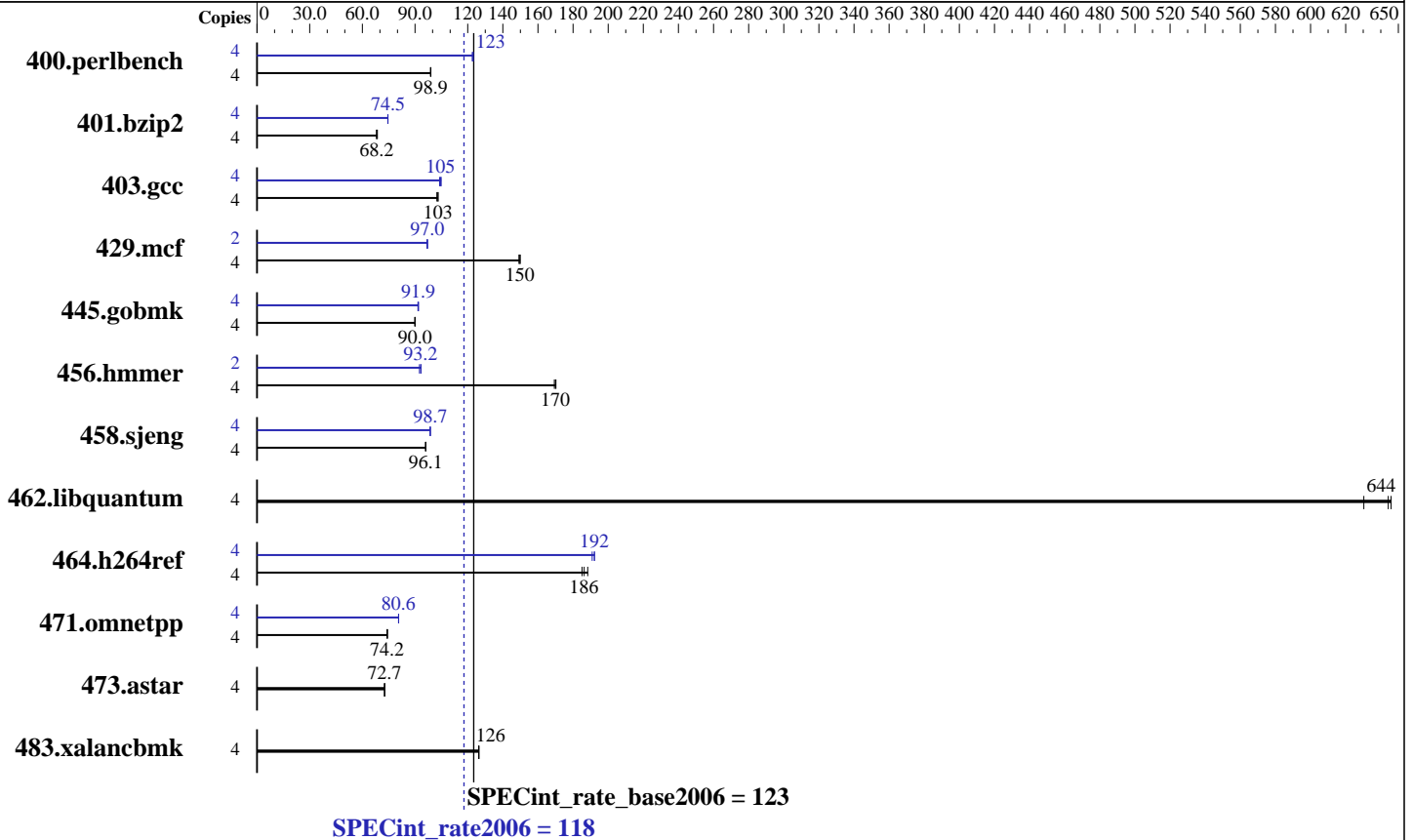
Test date: Mar-2011

Test sponsor: Bull SAS

Hardware Availability: May-2011

Tested by: Dell Inc.

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Xeon E3-1220  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz  
 CPU MHz: 3100  
 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 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86\_64), Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap 8.1 32-bit Library for Linux



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### Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	396	98.8	<u>395</u>	<u>98.9</u>	395	99.0	4	<u>318</u>	<u>123</u>	319	123	317	123
401.bzip2	4	<u>566</u>	<u>68.2</u>	563	68.5	567	68.0	4	517	74.6	<u>518</u>	<u>74.5</u>	518	74.5
403.gcc	4	312	103	314	102	<u>313</u>	<u>103</u>	4	<u>308</u>	<u>105</u>	307	105	310	104
429.mcf	4	245	149	243	150	<u>244</u>	<u>150</u>	2	188	96.8	<u>188</u>	<u>97.0</u>	188	97.1
445.gobmk	4	466	90.0	<u>466</u>	<u>90.0</u>	467	89.9	4	458	91.7	<u>457</u>	<u>91.9</u>	456	91.9
456.hammer	4	219	170	220	169	<u>220</u>	<u>170</u>	2	200	93.4	202	92.5	<u>200</u>	<u>93.2</u>
458.sjeng	4	504	96.0	504	96.1	<u>504</u>	<u>96.1</u>	4	490	98.7	<u>491</u>	<u>98.7</u>	491	98.6
462.libquantum	4	<u>129</u>	<u>644</u>	128	646	131	630	4	<u>129</u>	<u>644</u>	128	646	131	630
464.h264ref	4	<u>475</u>	<u>186</u>	478	185	470	188	4	464	191	<u>461</u>	<u>192</u>	461	192
471.omnetpp	4	337	74.3	337	74.1	<u>337</u>	<u>74.2</u>	4	310	80.7	310	80.6	<u>310</u>	<u>80.6</u>
473.astar	4	386	72.7	387	72.6	<u>386</u>	<u>72.7</u>	4	386	72.7	387	72.6	<u>386</u>	<u>72.7</u>
483.xalancbmk	4	218	126	219	126	<u>219</u>	<u>126</u>	4	218	126	219	126	<u>219</u>	<u>126</u>

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.  
numactl was used to bind copies to the cores

### Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 3600> /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

### Platform Notes

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

### General Notes

The Dell PowerEdge T110 II and the Bull NovaScale T810B F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge T110 II model. Binaries were compiled on RHEL5.5



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## Base Compiler Invocation

C benchmarks:

icc -m32

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:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/smartheap -lsmartheap  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

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## Peak Compiler Invocation (Continued)

C++ benchmarks:  
icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2)  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-auto-ilp32 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

403.gcc: -xAVX -ipo -O3 -no-prec-div  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

429.mcf: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias  
-auto-ilp32

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -auto-ilp32

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4  
-auto-ilp32  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

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## Peak Optimization Flags (Continued)

464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -xAVX(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/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.xml>

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

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