



# SPEC<sup>®</sup> CINT2006 Result

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## Bull SAS

SPECint<sup>®</sup>\_rate2006 = 369

NovaScale R460 F2 (Intel Xeon X5650, 2.66 GHz)

SPECint\_rate\_base2006 = 352

CPU2006 license: 20

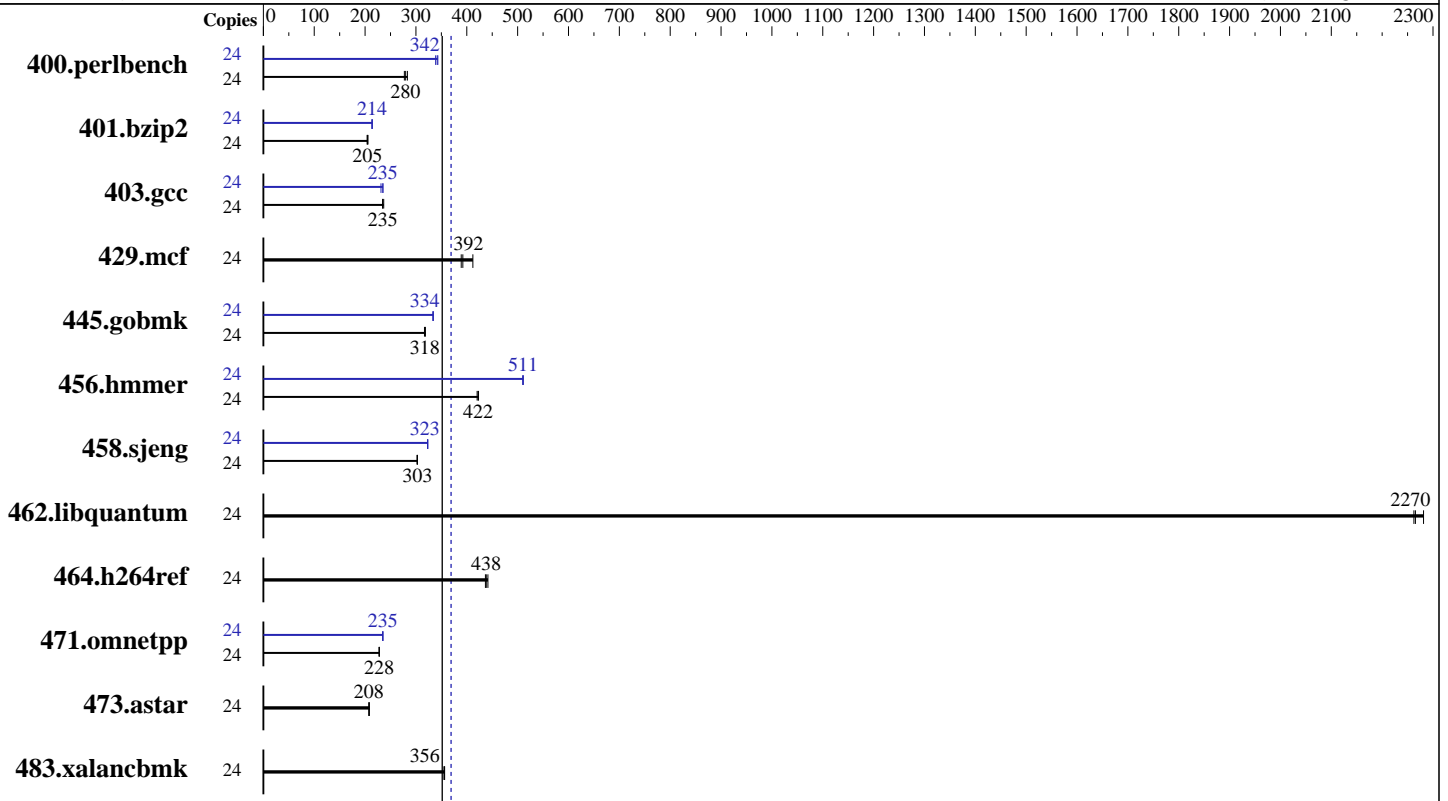
Test sponsor: Bull SAS

Tested by: Dell Inc.

Test date: Aug-2011

Hardware Availability: Mar-2010

Software Availability: Aug-2011



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### Hardware

CPU Name: Intel Xeon X5650  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.06 GHz  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 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++ Compiler XE for applications running on IA-32 12.1.0.225 Build 20110803  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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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	24	828	283	846	277	<b>838</b>	<b>280</b>	24	692	339	<b>686</b>	<b>342</b>	683	343
401.bzip2	24	1126	206	<b>1132</b>	<b>205</b>	1135	204	24	<b>1082</b>	<b>214</b>	1085	213	1082	214
403.gcc	24	824	234	<b>823</b>	<b>235</b>	816	237	24	<b>823</b>	<b>235</b>	821	235	835	231
429.mcf	24	531	412	<b>558</b>	<b>392</b>	563	389	24	531	412	<b>558</b>	<b>392</b>	563	389
445.gobmk	24	791	318	<b>792</b>	<b>318</b>	795	317	24	754	334	755	333	<b>754</b>	<b>334</b>
456.hammer	24	<b>530</b>	<b>422</b>	529	423	533	420	24	<b>438</b>	<b>511</b>	439	510	438	511
458.sjeng	24	<b>959</b>	<b>303</b>	958	303	961	302	24	898	323	<b>899</b>	<b>323</b>	899	323
462.libquantum	24	218	2280	<b>220</b>	<b>2270</b>	220	2260	24	218	2280	<b>220</b>	<b>2270</b>	220	2260
464.h264ref	24	1216	437	1203	442	<b>1212</b>	<b>438</b>	24	1216	437	1203	442	<b>1212</b>	<b>438</b>
471.omnetpp	24	<b>659</b>	<b>228</b>	659	228	658	228	24	<b>639</b>	<b>235</b>	638	235	639	235
473.astar	24	<b>811</b>	<b>208</b>	809	208	812	208	24	<b>811</b>	<b>208</b>	809	208	812	208
483.xalancbmk	24	465	356	<b>465</b>	<b>356</b>	466	355	24	465	356	<b>465</b>	<b>356</b>	466	355

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

```
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 10800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

Power Management = Maximum Performance (Default = Active Power Controller)

## General Notes

environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/root/cpu2006/smartheap:/root/cpu2006/ic12.1-libs/ia32:/root/cpu2006/ic12.1-libs/intel64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB  
memory using RHEL5.5 with binutils-2.17.50.0.6-14.el5  
Stack size set to unlimited using "ulimit -s unlimited"

runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

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### General Notes (Continued)

The Dell PowerEdge R710 and the Bull NovaScale R460 F2 models are electronically equivalent. The results have been measured on a Dell PowerEdge R710 model

### 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:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/smartheap -lsmartheap

### 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

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## Peak Compiler Invocation (Continued)

456.hmmer: icc -m64

458.sjeng: icc -m64

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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32

401.bzip2: -xSSE4.2(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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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## Peak Optimization Flags (Continued)

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/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-ic12.1-linux64.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110920.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110920.xml>

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

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