



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale R480E1  
(Intel Xeon E7340, 2.40GHz)

**SPECint®\_rate2006 = 190**

**SPECint\_rate\_base2006 = 160**

CPU2006 license: 20

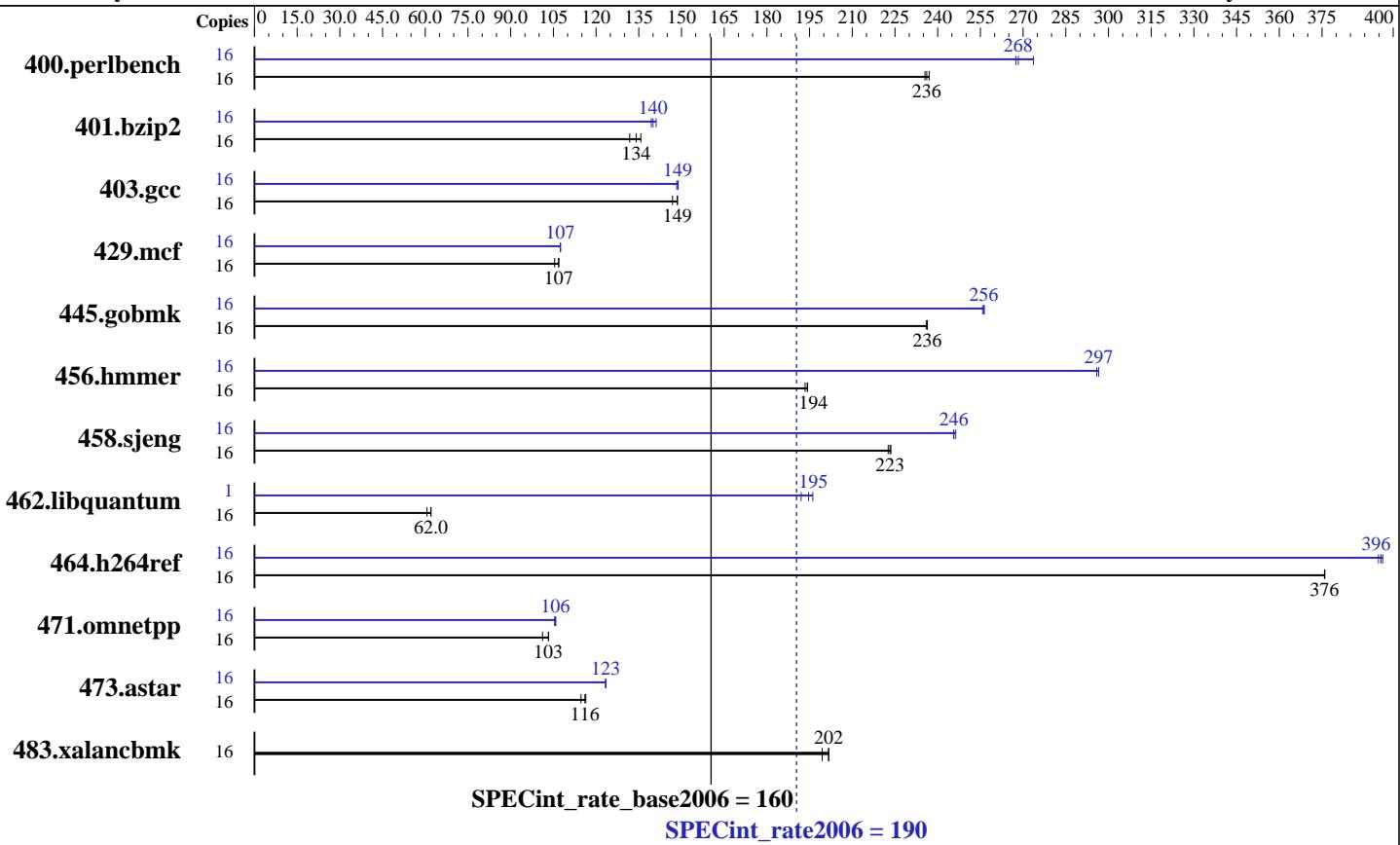
Test sponsor: Bull SAS

Tested by: Bull SAS

**Test date:** Dec-2007

**Hardware Availability:** Dec-2007

**Software Availability:** Nov-2007



### Hardware

CPU Name: Intel Xeon E7340  
CPU Characteristics: 2.40 GHz, 8 MB L2, 1066 MHz system bus  
CPU MHz: 2400  
FPU: Integrated  
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
CPU(s) orderable: 1 to 4 chips  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores  
L3 Cache: None  
Other Cache: None  
Memory: 32 GB (16x2 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  
Compiler: Kernel 2.6.16.46-0.12-smp for x86\_64  
Auto Parallel: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070725  
File System: Yes  
System State: ReiserFS  
Base Pointers: Multi-user run level 3  
Peak Pointers: 32-bit  
Other Software: 32/64-bit  
SmartHeap library V8.1  
Binutils 2.17.50.0.15



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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	16	<b>662</b>	<b>236</b>	664	236	660	237	16	<b>583</b>	<b>268</b>	585	267	571	274
401.bzip2	16	1171	132	<b>1152</b>	<b>134</b>	1138	136	16	1108	139	<b>1103</b>	<b>140</b>	1094	141
403.gcc	16	877	147	<b>867</b>	<b>149</b>	867	149	16	868	148	<b>866</b>	<b>149</b>	865	149
429.mcf	16	1384	105	<b>1366</b>	<b>107</b>	1365	107	16	<b>1358</b>	<b>107</b>	1357	108	1359	107
445.gobmk	16	711	236	710	236	<b>710</b>	<b>236</b>	16	<b>655</b>	<b>256</b>	655	256	656	256
456.hammer	16	772	193	<b>769</b>	<b>194</b>	768	194	16	503	297	505	296	<b>503</b>	<b>297</b>
458.sjeng	16	866	224	<b>867</b>	<b>223</b>	870	223	16	786	246	788	246	<b>788</b>	<b>246</b>
462.libquantum	16	5472	60.6	5346	62.0	<b>5348</b>	<b>62.0</b>	1	108	192	<b>106</b>	<b>195</b>	106	196
464.h264ref	16	942	376	<b>942</b>	<b>376</b>	942	376	16	<b>895</b>	<b>396</b>	897	395	893	396
471.omnetpp	16	988	101	968	103	<b>969</b>	<b>103</b>	16	945	106	<b>946</b>	<b>106</b>	949	105
473.astar	16	979	115	965	116	<b>968</b>	<b>116</b>	16	910	123	<b>910</b>	<b>123</b>	910	123
483.xalancbmk	16	554	199	547	202	<b>547</b>	<b>202</b>	16	554	199	547	202	<b>547</b>	<b>202</b>

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

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hammer for peak, are compiled in 64-bit mode

/usr/bin/taskset utility used to bind CPU(s) to processes

## General Notes

BIOS settings :

Hardware Prefetcher : Disabled

Adjacent Cache-Line Prefetch : Disabled

## 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 -inline-calloc -opt-malloc-options=3

C++ benchmarks:

-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/home/cmpllr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

401.bzip2: /home/cmpllr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmpllr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmpllr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include

456.hmmr: /home/cmpllr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmpllr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmpllr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include

C++ benchmarks:

icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmr: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

483.xalancbmk: -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

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.hmmer: -fast -unroll12 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll14 -O0 -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 -unroll12  
-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/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

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/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

483.xalancbmk: basepeak = yes



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## 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/EM64T\\_Intel101\\_flags.html](http://www.spec.org/cpu2006/flags/EM64T_Intel101_flags.html)

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

[http://www.spec.org/cpu2006/flags/EM64T\\_Intel101\\_flags.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel101_flags.xml)

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

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