



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale R440  
(Intel Xeon processor E5310,1.60GHz)

SPECint®2006 = 12.5

SPECint\_base2006 = 11.3

CPU2006 license: 20

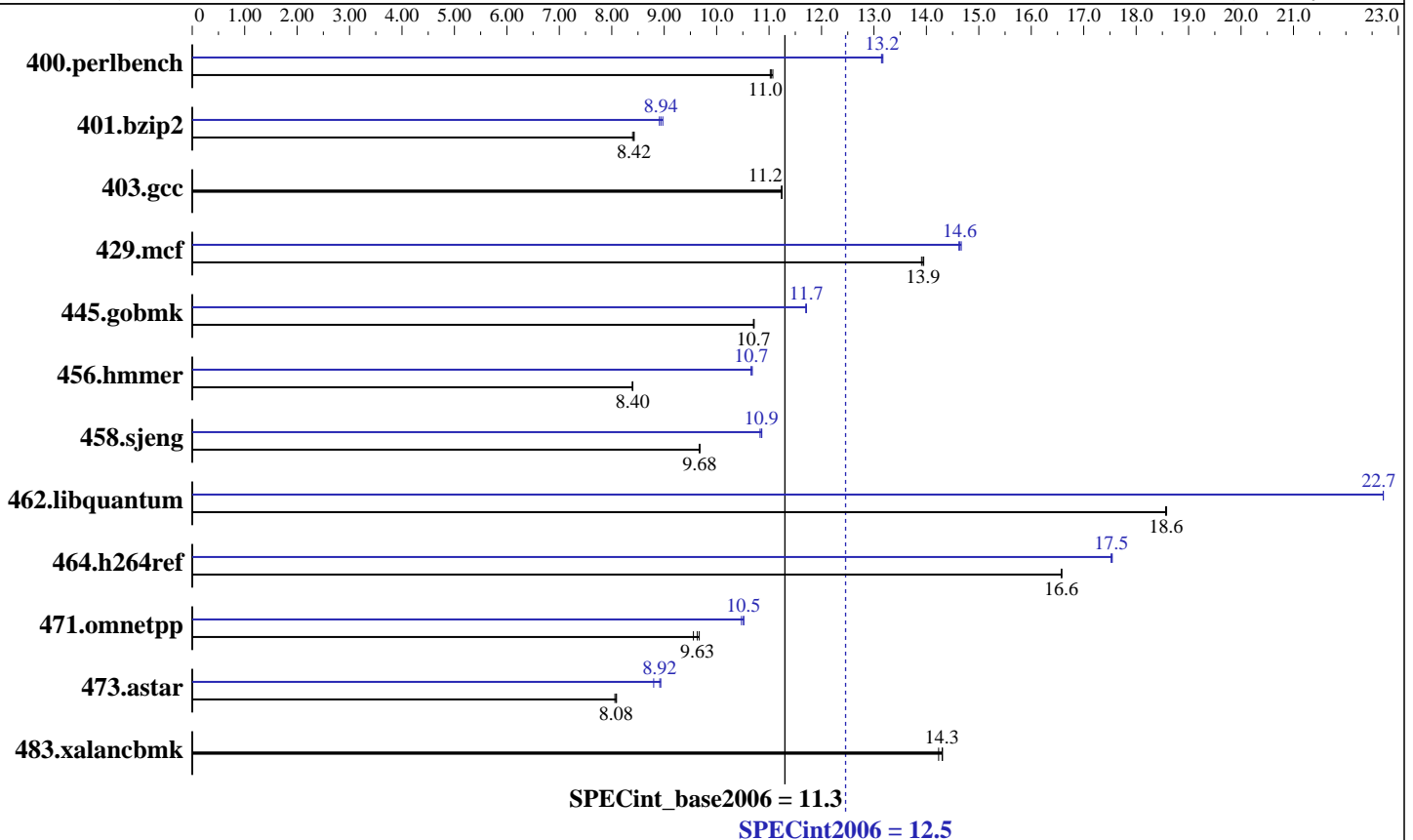
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2007

Hardware Availability: Mar-2007

Software Availability: May-2007



### Hardware

CPU Name: Intel Xeon E5310  
 CPU Characteristics: 1.60 GHz, 8 MB L2, 1066 MHz system bus  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1 to 2 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: 12 GB (12x1 GB) FB-DIMM PC2-4200F ECC CL4  
 Disk Subsystem: 1x73 GB SAS, 15000 RPM  
 Other Hardware: None

### Software

Operating System: SUSE LINUX Enterprise Server 10  
 Kernel 2.6.16.21-0.8-smp for x86\_64  
 Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.0  
 Build 20070426 Package ID: l\_cc\_p\_10.0.023  
 Auto Parallel: No  
 File System: ext2  
 System State: Multi-user run level 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap library V8.1  
 Binutils 2.17.50.0.15



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	882	11.1	886	11.0	<b>885</b>	<b>11.0</b>	743	13.1	<b>743</b>	<b>13.2</b>	742	13.2
401.bzip2	1145	8.43	1149	8.40	<b>1145</b>	<b>8.42</b>	1083	8.91	<b>1080</b>	<b>8.94</b>	1075	8.97
403.gcc	716	11.2	716	11.2	<b>716</b>	<b>11.2</b>	716	11.2	716	11.2	<b>716</b>	<b>11.2</b>
429.mcf	<b>654</b>	<b>13.9</b>	656	13.9	654	13.9	624	14.6	<b>623</b>	<b>14.6</b>	622	14.7
445.gobmk	980	10.7	979	10.7	<b>980</b>	<b>10.7</b>	<b>896</b>	<b>11.7</b>	897	11.7	896	11.7
456.hmmer	1112	8.39	1110	8.40	<b>1111</b>	<b>8.40</b>	<b>875</b>	<b>10.7</b>	875	10.7	874	10.7
458.sjeng	<b>1250</b>	<b>9.68</b>	1250	9.68	1252	9.67	1114	10.9	1117	10.8	<b>1115</b>	<b>10.9</b>
462.libquantum	<b>1116</b>	<b>18.6</b>	1116	18.6	1115	18.6	<b>912</b>	<b>22.7</b>	912	22.7	912	22.7
464.h264ref	<b>1335</b>	<b>16.6</b>	1335	16.6	1335	16.6	<b>1262</b>	<b>17.5</b>	1263	17.5	1261	17.5
471.omnetpp	646	9.67	654	9.56	<b>649</b>	<b>9.63</b>	597	10.5	<b>595</b>	<b>10.5</b>	594	10.5
473.astar	871	8.06	<b>869</b>	<b>8.08</b>	868	8.09	<b>787</b>	<b>8.92</b>	798	8.80	786	8.94
483.xalancbmk	482	14.3	485	14.2	<b>483</b>	<b>14.3</b>	482	14.3	485	14.2	<b>483</b>	<b>14.3</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.hmmer, for peak, are compiled in 64-bit mode

## General Notes

The NovaScale R440 and the NovaScale R460 models are electronically equivalent.  
The results have been measured on a NovaScale R460 model.

## 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  
  
C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/spec/cpu2006/lib -lsmartheap

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc  
  
401.bzip2: /opt/intel/cce/10.0.023/bin/icc  
-L/opt/intel/cce/10.0.023/lib  
-I/opt/intel/cce/10.0.023/include  
  
456.hmmer: /opt/intel/cce/10.0.023/bin/icc  
-L/opt/intel/cce/10.0.023/lib  
-I/opt/intel/cce/10.0.023/include  
  
C++ benchmarks:  
icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -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

403.gcc: basepeak = yes

429.mcf: -fast -prefetch

445.gobmk: -prof\_gen(pass 1) -prof\_use(pass 2) -xT -O2 -ipo  
-no-prec\_div -ansi-alias

456.hmmer: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -unroll2  
-ansi-alias

458.sjeng: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -unroll4

462.libquantum: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -unroll4 -Ob0  
-prefetch -opt-streaming-stores always

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof\_gen(pass 1) -prof\_use(pass 2) -xT -O3 -ipo  
-no-prec\_div -ansi-alias -Wl,-z,muldefs  
-L/spec/cpu2006/lib -lsmartheap

473.astar: Same as 471.omnetpp

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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The flags file that was used to format this result can be browsed at  
[http://www.spec.org/cpu2006/flags/EM64T\\_Intel100\\_flags.20090714.html](http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.html)

You can also download the XML flags source by saving the following link:  
[http://www.spec.org/cpu2006/flags/EM64T\\_Intel100\\_flags.20090714.xml](http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.xml)

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

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