



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale R480 E1  
(Intel Xeon E7430, 2.13 GHz)

SPECint®\_rate2006 = 99.7

SPECint\_rate\_base2006 = 93.9

CPU2006 license: 20

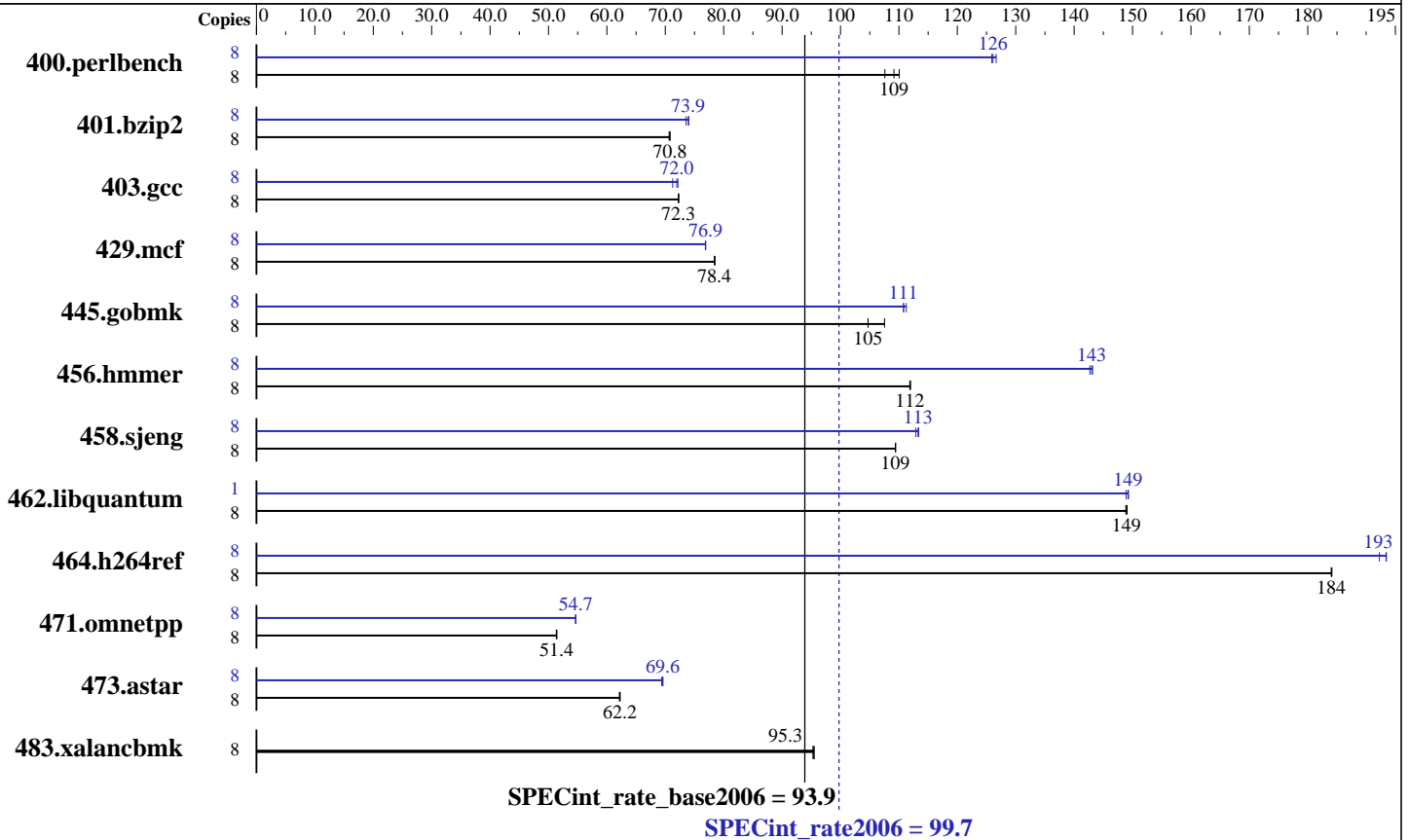
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Feb-2009

Hardware Availability: Nov-2008

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E7430  
 CPU Characteristics: 1066 MHz system bus  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2,3,4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores  
 L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (16 x 2GB DDR2-667 FBDIMM)  
 Disk Subsystem: 1x146 GB SAS, 10000 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042  
 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	710	110	<b><u>716</u></b>	<b><u>109</u></b>	726	108	8	617	127	621	126	<b><u>620</u></b>	<b><u>126</u></b>
401.bzip2	8	1093	70.7	<b><u>1091</u></b>	<b><u>70.8</u></b>	1090	70.8	8	1043	74.0	<b><u>1044</u></b>	<b><u>73.9</u></b>	1050	73.6
403.gcc	8	892	72.2	891	72.3	<b><u>891</u></b>	<b><u>72.3</u></b>	8	892	72.2	<b><u>895</u></b>	<b><u>72.0</u></b>	904	71.3
429.mcf	8	929	78.5	931	78.4	<b><u>930</u></b>	<b><u>78.4</u></b>	8	949	76.9	949	76.9	<b><u>949</u></b>	<b><u>76.9</u></b>
445.gobmk	8	801	105	<b><u>801</u></b>	<b><u>105</u></b>	780	108	8	<b><u>757</u></b>	<b><u>111</u></b>	757	111	754	111
456.hammer	8	667	112	666	112	<b><u>667</u></b>	<b><u>112</u></b>	8	<b><u>522</u></b>	<b><u>143</u></b>	521	143	523	143
458.sjeng	8	<b><u>885</u></b>	<b><u>109</u></b>	885	109	885	109	8	854	113	<b><u>855</u></b>	<b><u>113</u></b>	857	113
462.libquantum	8	1114	149	<b><u>1113</u></b>	<b><u>149</u></b>	1112	149	1	139	149	139	149	<b><u>139</u></b>	<b><u>149</u></b>
464.h264ref	8	961	184	<b><u>962</u></b>	<b><u>184</u></b>	962	184	8	915	193	<b><u>915</u></b>	<b><u>193</u></b>	921	192
471.omnetpp	8	<b><u>973</u></b>	<b><u>51.4</u></b>	972	51.4	974	51.3	8	914	54.7	915	54.6	<b><u>914</u></b>	<b><u>54.7</u></b>
473.astar	8	<b><u>902</u></b>	<b><u>62.2</u></b>	902	62.3	904	62.1	8	807	69.6	809	69.4	<b><u>807</u></b>	<b><u>69.6</u></b>
483.xalancbmk	8	578	95.5	<b><u>579</u></b>	<b><u>95.3</u></b>	579	95.3	8	578	95.5	<b><u>579</u></b>	<b><u>95.3</u></b>	579	95.3

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.  
taskset was used to bind processes to cores except  
for 462.libquantum peak

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 64M

## Platform Notes

BIOS Settings:  
Adjacent Cache Line Prefetch = Disabled  
Hardware Prefetcher = Disabled

## General Notes

The NEC Express5800/R140a-4(Intel Xeon E7430) and  
the Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) models are electronically equivalent.  
The results have been measured on a Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) model.



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## Base Compiler Invocation

C benchmarks:  
icc  
  
C++ benchmarks:  
icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -opt-prefetch  
  
C++ benchmarks:  
-xSSE4.1 -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  
  
401.bzip2: /opt/intel/Compiler/11.0/042/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include  
  
456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

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## Peak Compiler Invocation (Continued)

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  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -ansi-alias -opt-prefetch  
401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch -ansi-alias  
403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc  
-opt-malloc-options=3  
429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch  
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo  
-no-prec-div -ansi-alias  
456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias  
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4  
462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static  
-opt-malloc-options=3 -parallel -par-runtime-control  
-opt-prefetch  
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

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## Peak Optimization Flags (Continued)

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -ansi-alias -opt-ra-region-strategy=block  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

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-ic11.0-int-linux64-revA.20090710.00.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.00.xml>

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

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

Tested with SPEC CPU2006 v1.1.  
Report generated on Tue Jul 22 23:21:35 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 31 March 2009.