



# SPEC® CINT2006 Result

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## Bull SAS

NovaScale R460 F2  
(Intel Xeon E5540, 2.53 GHz)

SPECint®\_rate2006 = 225

SPECint\_rate\_base2006 = 212

CPU2006 license: 20

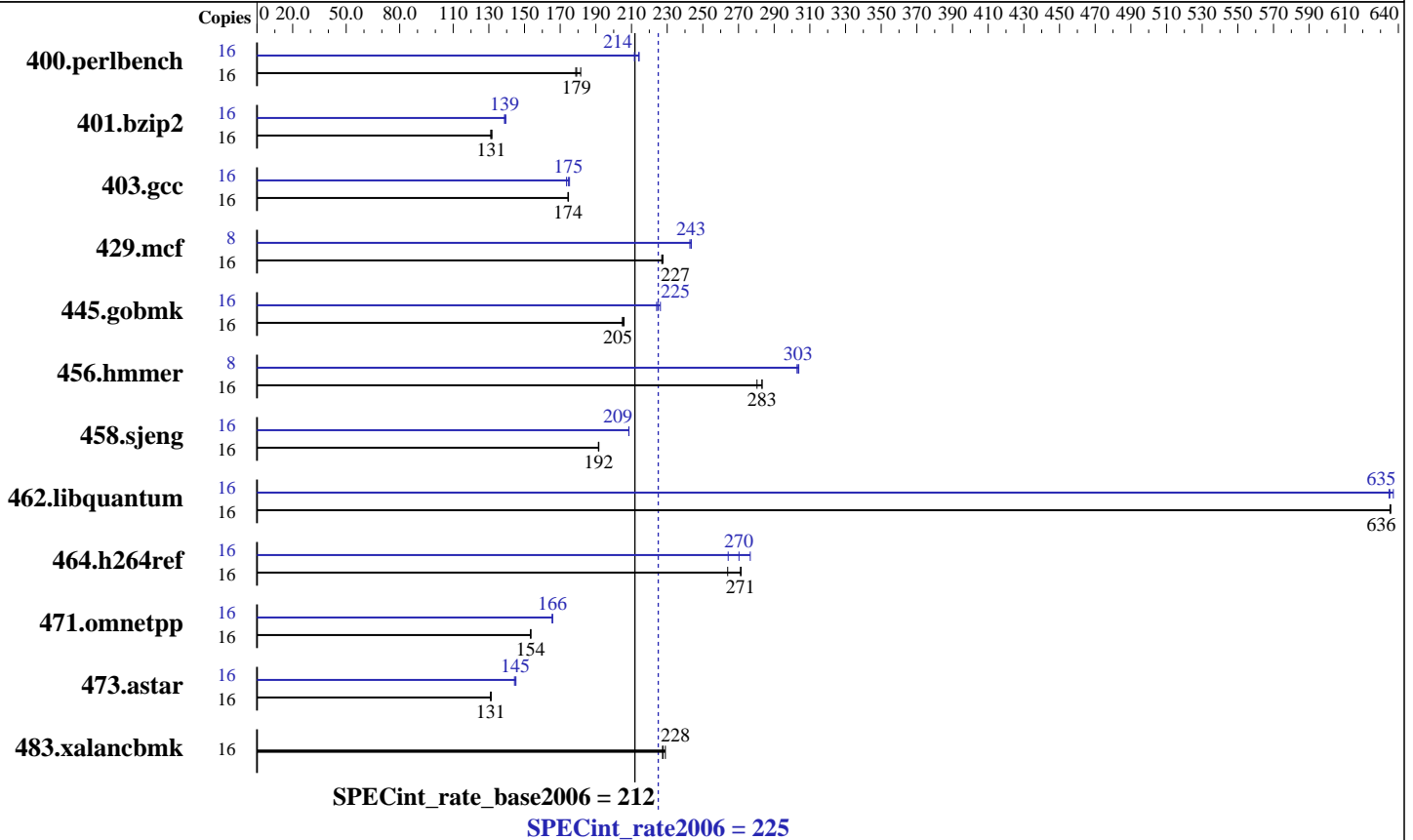
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Mar-2010

Hardware Availability: Jan-2010

Software Availability: Dec-2009



### Hardware

CPU Name: Intel Xeon E5540  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2533  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6 x 4 GB PC3-10600R, 2 Rank, CL9-9-9, ECC, running at 1066 MHz)  
 Disk Subsystem: 1 x 73 GB SAS, 10000 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp  
 Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l\_cproc\_p\_11.1.064  
 Auto Parallel: No  
 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  | 16     | 861        | 182        | 874         | 179        | <b>872</b>  | <b>179</b> | 16     | 729         | 214        | <b>731</b> | <b>214</b> | 739         | 212        |
| 401.bzip2      | 16     | 1172       | 132        | <b>1174</b> | <b>131</b> | 1178        | 131        | 16     | 1112        | 139        | 1107       | 140        | <b>1111</b> | <b>139</b> |
| 403.gcc        | 16     | 737        | 175        | <b>738</b>  | <b>174</b> | 739         | 174        | 16     | 735         | 175        | <b>738</b> | <b>175</b> | 742         | 174        |
| 429.mcf        | 16     | <b>643</b> | <b>227</b> | 643         | 227        | 641         | 228        | 8      | 300         | 244        | 301        | 243        | <b>300</b>  | <b>243</b> |
| 445.gobmk      | 16     | 816        | 206        | 819         | 205        | <b>818</b>  | <b>205</b> | 16     | 742         | 226        | 749        | 224        | <b>747</b>  | <b>225</b> |
| 456.hammer     | 16     | 532        | 280        | 527         | 283        | <b>527</b>  | <b>283</b> | 8      | 246         | 304        | 246        | 303        | <b>246</b>  | <b>303</b> |
| 458.sjeng      | 16     | 1011       | 191        | 1010        | 192        | <b>1011</b> | <b>192</b> | 16     | 929         | 208        | <b>928</b> | <b>209</b> | 928         | 209        |
| 462.libquantum | 16     | 522        | 635        | 522         | 636        | <b>522</b>  | <b>636</b> | 16     | 522         | 635        | <b>522</b> | <b>635</b> | 520         | 637        |
| 464.h264ref    | 16     | 1342       | 264        | <b>1306</b> | <b>271</b> | 1304        | 272        | 16     | <b>1310</b> | <b>270</b> | 1280       | 277        | 1340        | 264        |
| 471.omnetpp    | 16     | 652        | 153        | 651         | 154        | <b>651</b>  | <b>154</b> | 16     | <b>604</b>  | <b>166</b> | 603        | 166        | 604         | 166        |
| 473.astar      | 16     | 858        | 131        | 855         | 131        | <b>857</b>  | <b>131</b> | 16     | 774         | 145        | <b>776</b> | <b>145</b> | 778         | 144        |
| 483.xalancbmk  | 16     | 485        | 227        | <b>485</b>  | <b>228</b> | 482         | 229        | 16     | 485         | 227        | <b>485</b> | <b>228</b> | 482         | 229        |

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

## General Notes

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

## Base Compiler Invocation

C benchmarks:  
icc -m32

C++ benchmarks:  
icpc -m32



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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:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.icl1.1/libicl1.1-32bit -lsmartheap

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

462.libquantum: icc -m64

C++ benchmarks (except as noted below):  
icpc -m32

473.astar: icpc -m64

## Peak Portability Flags

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

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## Peak Portability Flags (Continued)

456.hmmcr: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
473.astar: -DSPEC\_CPU\_LP64  
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) -static(pass 2)  
-prof-use(pass 2) -ansi-alias  
401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32  
403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static  
429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
-ipo -no-prec-div -ansi-alias  
456.hmmcr: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias -auto-ilp32  
458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll4 -auto-ilp32  
462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-prefetch  
464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -unroll2 -ansi-alias

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap  
473.astar: -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=routine -Wl,-z,muldefs

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## Peak Optimization Flags (Continued)

473.astar (continued):  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmarthheap64  
483.xalancbmk: basepeak = yes

## 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/Intel-ic11.1-linux64-revE.20100316.html>

You can also download the XML flags source by saving the following link:  
<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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