



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®\_rate2006 = 213

PowerEdge R610 (Intel Xeon E5540, 2.53 GHz)

SPECint\_rate\_base2006 = 196

CPU2006 license: 55

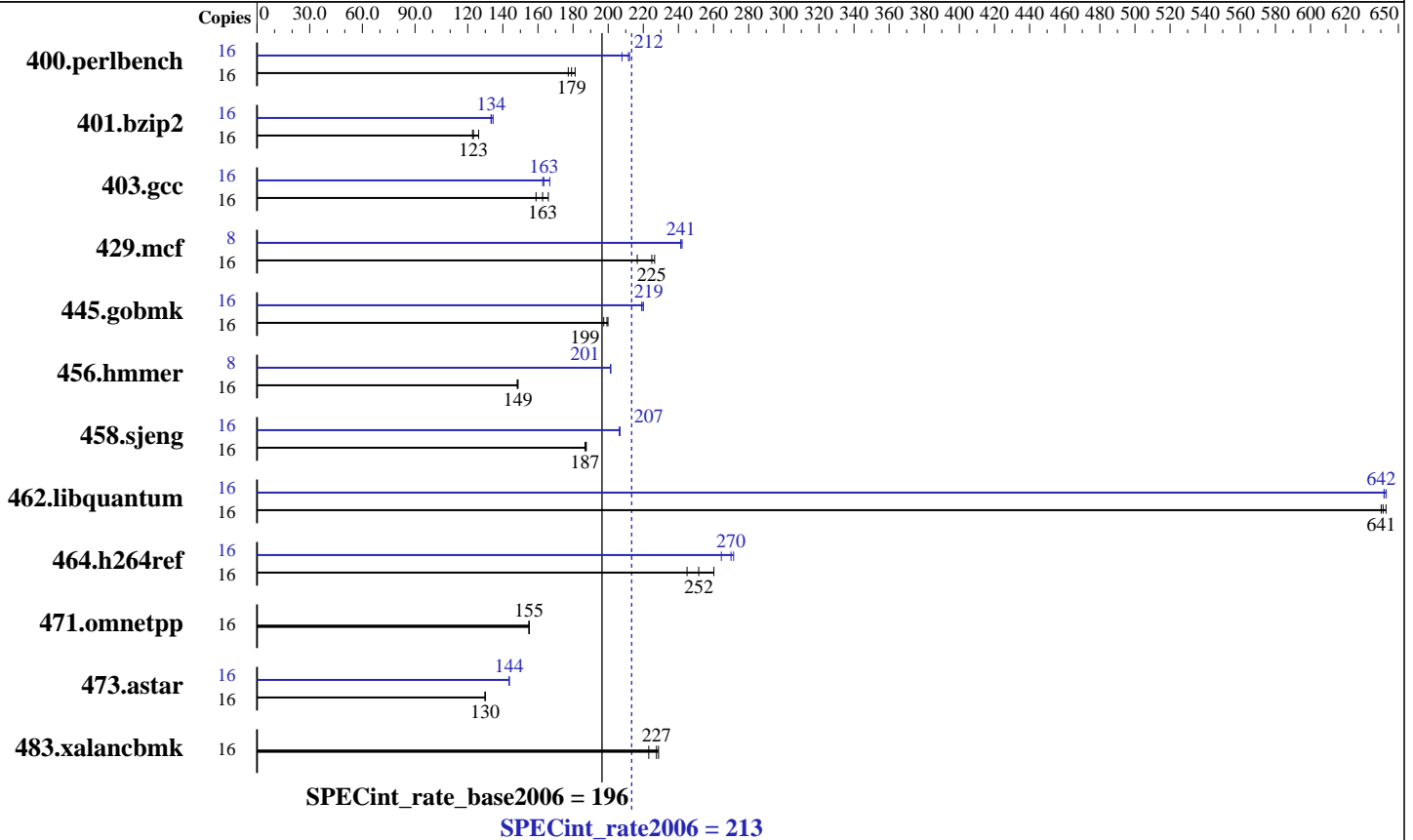
Test date: Apr-2009

Test sponsor: Dell Inc.

Hardware Availability: Mar-2009

Tested by: Dell Inc.

Software Availability: Mar-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 DDR3-1066 DR RDIMM)  
 Disk Subsystem: 1 x 146 GB 10000 RPM SAS  
 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 Professional 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080  
 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     | 882         | 177        | <b>873</b>  | <b>179</b> | 863        | 181        | 16     | 752         | 208        | <b>739</b> | <b>212</b> | 737         | 212        |
| 401.bzip2      | 16     | 1258        | 123        | <b>1253</b> | <b>123</b> | 1223       | 126        | 16     | 1148        | 134        | 1159       | 133        | <b>1156</b> | <b>134</b> |
| 403.gcc        | 16     | 776         | 166        | <b>792</b>  | <b>163</b> | 811        | 159        | 16     | <b>788</b>  | <b>163</b> | 773        | 167        | 791         | 163        |
| 429.mcf        | 16     | 674         | 217        | <b>649</b>  | <b>225</b> | 644        | 226        | 8      | 301         | 242        | 302        | 241        | <b>302</b>  | <b>241</b> |
| 445.gobmk      | 16     | 850         | 197        | <b>842</b>  | <b>199</b> | 840        | 200        | 16     | 766         | 219        | 763        | 220        | <b>766</b>  | <b>219</b> |
| 456.hammer     | 16     | 1008        | 148        | <b>1005</b> | <b>149</b> | 1004       | 149        | 8      | <b>371</b>  | <b>201</b> | 371        | 201        | 371         | 201        |
| 458.sjeng      | 16     | 1036        | 187        | <b>1034</b> | <b>187</b> | 1032       | 188        | 16     | <b>938</b>  | <b>207</b> | 938        | 206        | 937         | 207        |
| 462.libquantum | 16     | 516         | 643        | <b>517</b>  | <b>641</b> | 518        | 640        | 16     | 517         | 642        | <b>516</b> | <b>642</b> | 515         | 643        |
| 464.h264ref    | 16     | <b>1408</b> | <b>252</b> | 1361        | 260        | 1446       | 245        | 16     | <b>1312</b> | <b>270</b> | 1304       | 271        | 1339        | 264        |
| 471.omnetpp    | 16     | 646         | 155        | 645         | 155        | <b>645</b> | <b>155</b> | 16     | 646         | 155        | 645        | 155        | <b>645</b>  | <b>155</b> |
| 473.astar      | 16     | <b>864</b>  | <b>130</b> | 863         | 130        | 865        | 130        | 16     | 782         | 144        | 782        | 144        | <b>782</b>  | <b>144</b> |
| 483.xalanbmk   | 16     | 495         | 223        | 483         | 229        | <b>485</b> | <b>227</b> | 16     | 495         | 223        | 483        | 229        | <b>485</b>  | <b>227</b> |

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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-alloc  
-opt-malloc-options=3 -opt-prefetch

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xSSE4.2 -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/11.0/080/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/080/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/080/bin/intel64/icc

C++ benchmarks (except as noted below):

icpc

473.astar: /opt/intel/Compiler/11.0/080/bin/intel64/icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -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 -opt-prefetch

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## Peak Optimization Flags (Continued)

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

429.mcf: -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

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
-ipo -no-prec-div -ansi-alias

456.hmmer: -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  
-opt-malloc-options=3 -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: basepeak = yes

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 -auto-ilp32  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

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/Intel-ic11.0-int-linux64-revA.20090710.02.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.02.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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