



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®2006 = 27.6

PowerEdge R210 (Intel Core i3-530, 2.93 GHz)

SPECint\_base2006 = 24.6

CPU2006 license: 55

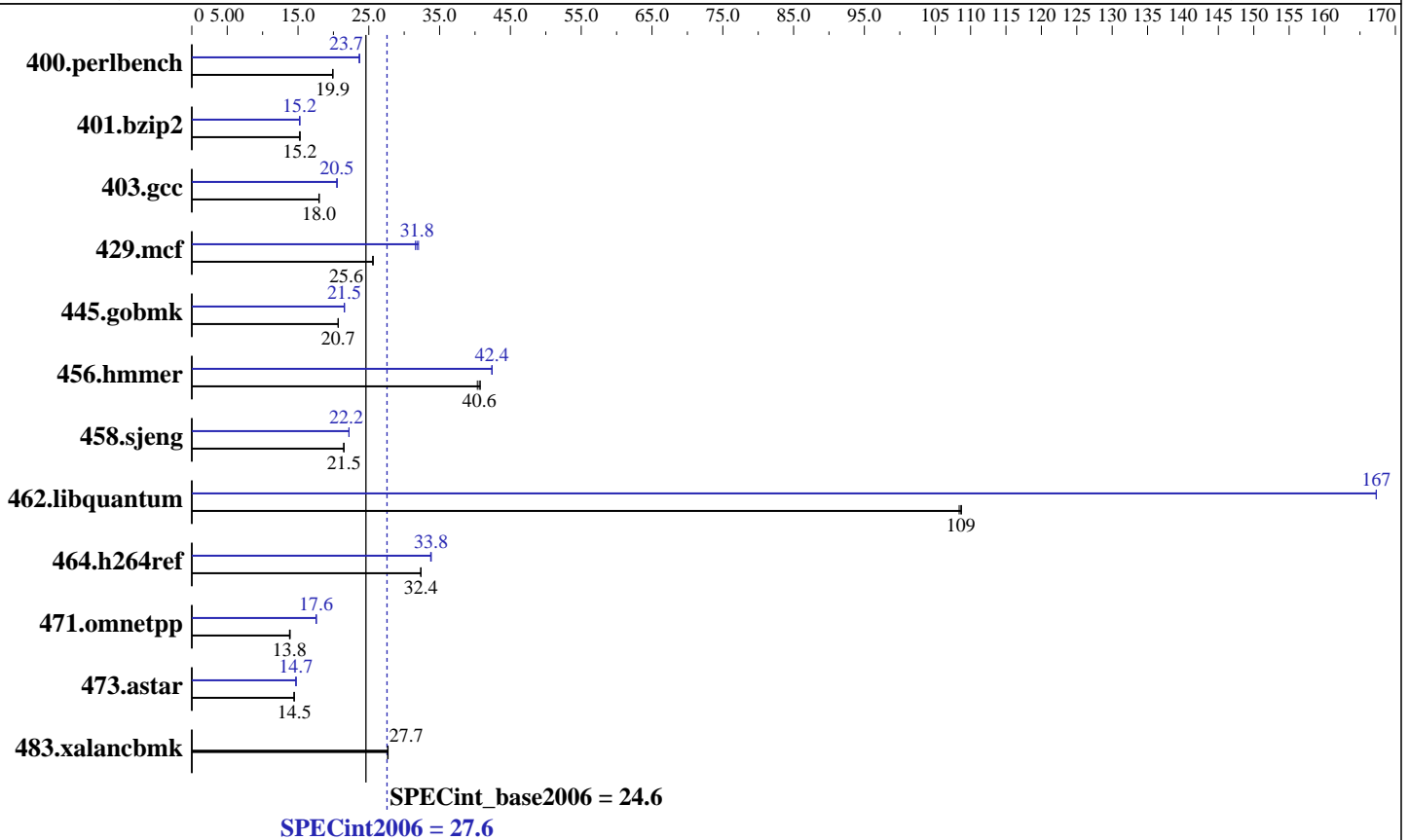
Test date: Jan-2010

Test sponsor: Dell Inc.

Hardware Availability: Jan-2010

Tested by: Dell Inc.

Software Availability: Dec-2009



**Hardware**

CPU Name: Intel Core i3-530  
 CPU Characteristics: 2933  
 CPU MHz: 2933  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (4 x 2 GB DDR3-1333 DR UDIMM)  
 Disk Subsystem: 1 x 160 GB 7200 RPM SATA  
 Other Hardware: None

**Software**

Operating System: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5  
 Compiler: Intel C++ Compiler Professional Edition 11.1 for Linux Build 20091012 Package ID: 1\_cproc\_p\_11.1.059  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	490	19.9	<b><u>491</u></b>	<b><u>19.9</u></b>	491	19.9	413	23.7	<b><u>413</u></b>	<b><u>23.7</u></b>	412	23.7
401.bzip2	631	15.3	<b><u>633</u></b>	<b><u>15.2</u></b>	634	15.2	632	15.3	<b><u>634</u></b>	<b><u>15.2</u></b>	634	15.2
403.gcc	447	18.0	<b><u>448</u></b>	<b><u>18.0</u></b>	449	17.9	<b><u>393</u></b>	<b><u>20.5</u></b>	392	20.5	393	20.5
429.mcf	356	25.6	<b><u>357</u></b>	<b><u>25.6</u></b>	357	25.5	285	32.0	289	31.6	<b><u>287</u></b>	<b><u>31.8</u></b>
445.gobmk	<b><u>507</u></b>	<b><u>20.7</u></b>	507	20.7	507	20.7	487	21.6	487	21.5	<b><u>487</u></b>	<b><u>21.5</u></b>
456.hammer	231	40.3	<b><u>230</u></b>	<b><u>40.6</u></b>	229	40.8	220	42.4	<b><u>220</u></b>	<b><u>42.4</u></b>	220	42.4
458.sjeng	563	21.5	<b><u>563</u></b>	<b><u>21.5</u></b>	564	21.5	545	22.2	<b><u>545</u></b>	<b><u>22.2</u></b>	545	22.2
462.libquantum	191	109	<b><u>191</u></b>	<b><u>109</u></b>	191	108	124	167	<b><u>124</u></b>	<b><u>167</u></b>	124	167
464.h264ref	684	32.4	685	32.3	<b><u>684</u></b>	<b><u>32.4</u></b>	656	33.7	<b><u>655</u></b>	<b><u>33.8</u></b>	655	33.8
471.omnetpp	450	13.9	453	13.8	<b><u>453</u></b>	<b><u>13.8</u></b>	355	17.6	<b><u>356</u></b>	<b><u>17.6</u></b>	356	17.6
473.astar	<b><u>485</u></b>	<b><u>14.5</u></b>	487	14.4	485	14.5	477	14.7	477	14.7	<b><u>477</u></b>	<b><u>14.7</u></b>
483.xalancbmk	249	27.7	249	27.7	<b><u>249</u></b>	<b><u>27.7</u></b>	249	27.7	249	27.7	<b><u>249</u></b>	<b><u>27.7</u></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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

## Platform Notes

BIOS Settings:  
Power Management = Maximum Performance (Default = Active Power Controller)

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
The Dell PowerEdge R210 and the Bull NovaScale R410 F2 models are electronically equivalent.  
This result was measured on a Dell PowerEdge R210.

## Base Compiler Invocation

C benchmarks:  
icc -m64

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
471.omnetpp: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -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.ic11.1/libic11.1-64bit -lsmartheap64

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

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## Peak Compiler Invocation (Continued)

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

471.omnetpp: `icpc -m32`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_X64`  
 401.bzip2: `-DSPEC_CPU_LP64`  
 403.gcc: `-DSPEC_CPU_LP64`  
 456.hmmer: `-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_LP64 -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`

401.bzip2: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div -static(pass 2) -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-alloc -opt-malloc-options=3 -auto-ilp32`

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.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`

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## Peak Optimization Flags (Continued)

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel  
-opt-prefetch -par-schedule-static=32768 -ansi-alias

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  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64

483.xalanbmk: 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-int-linux64-revA.20100216.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revA.20100216.xml>

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

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