



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®2006 = 31.5

PowerEdge R210 (Intel Xeon X3460, 2.80 GHz)

SPECint\_base2006 = 27.3

CPU2006 license: 55

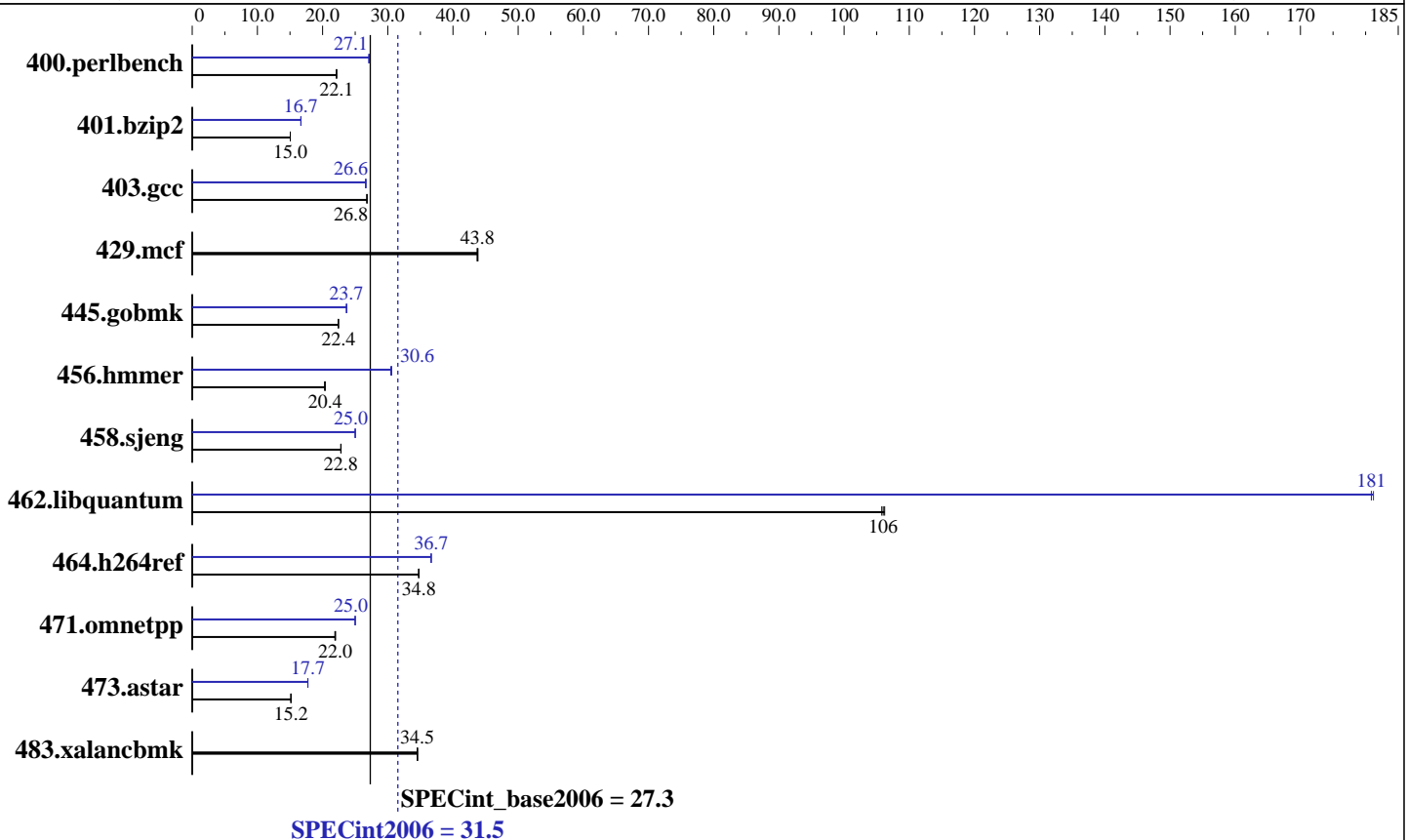
Test date: Sep-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009



## Hardware

CPU Name: Intel Xeon X3460  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: 8 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 20090511 Package ID: l\_cproc\_p\_11.1.040  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	442	22.1	<b>441</b>	<b>22.1</b>	441	22.2	360	27.1	360	27.1	<b>360</b>	<b>27.1</b>
401.bzip2	<b>641</b>	<b>15.0</b>	641	15.0	641	15.1	<b>579</b>	<b>16.7</b>	579	16.7	579	16.7
403.gcc	301	26.8	300	26.8	<b>300</b>	<b>26.8</b>	<b>302</b>	<b>26.6</b>	302	26.7	303	26.6
429.mcf	208	43.8	<b>208</b>	<b>43.8</b>	209	43.7	208	43.8	<b>208</b>	<b>43.8</b>	209	43.7
445.gobmk	<b>468</b>	<b>22.4</b>	468	22.4	468	22.4	443	23.7	444	23.7	<b>443</b>	<b>23.7</b>
456.hammer	459	20.3	<b>458</b>	<b>20.4</b>	457	20.4	306	30.5	305	30.6	<b>305</b>	<b>30.6</b>
458.sjeng	530	22.8	<b>530</b>	<b>22.8</b>	531	22.8	484	25.0	484	25.0	<b>484</b>	<b>25.0</b>
462.libquantum	196	106	195	106	<b>195</b>	<b>106</b>	114	181	115	181	<b>115</b>	<b>181</b>
464.h264ref	636	34.8	637	34.7	<b>636</b>	<b>34.8</b>	<b>604</b>	<b>36.7</b>	604	36.7	604	36.6
471.omnetpp	284	22.0	286	21.9	<b>285</b>	<b>22.0</b>	250	25.0	250	25.0	<b>250</b>	<b>25.0</b>
473.astar	<b>463</b>	<b>15.2</b>	463	15.2	464	15.1	<b>396</b>	<b>17.7</b>	396	17.7	395	17.7
483.xalancbmk	199	34.6	<b>200</b>	<b>34.5</b>	200	34.5	199	34.6	<b>200</b>	<b>34.5</b>	200	34.5

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.

## 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 -m32

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc -m32

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

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 -m32  
  
401.bzip2: icc -m64  
456.hmmer: icc -m64  
458.sjeng: icc -m64  
  
C++ benchmarks (except as noted below):  
icpc -m32  
  
473.astar: icpc -m64



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## 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

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) -auto-ilp32 -opt-prefetch

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
          -opt-malloc-options=3

429.mcf: basepeak = yes

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 -parallel
                -par-runtime-control -opt-prefetch -inline-calloc
                -opt-malloc-options=3

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/spec/cpu2006.1.1/lib -lsmartheap

```

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## Peak Optimization Flags (Continued)

```
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
```

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.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.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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