



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 83.9

PowerEdge R210 (Intel Xeon L3426, 1.86 GHz)

SPECint_rate_base2006 = 77.1

CPU2006 license: 55

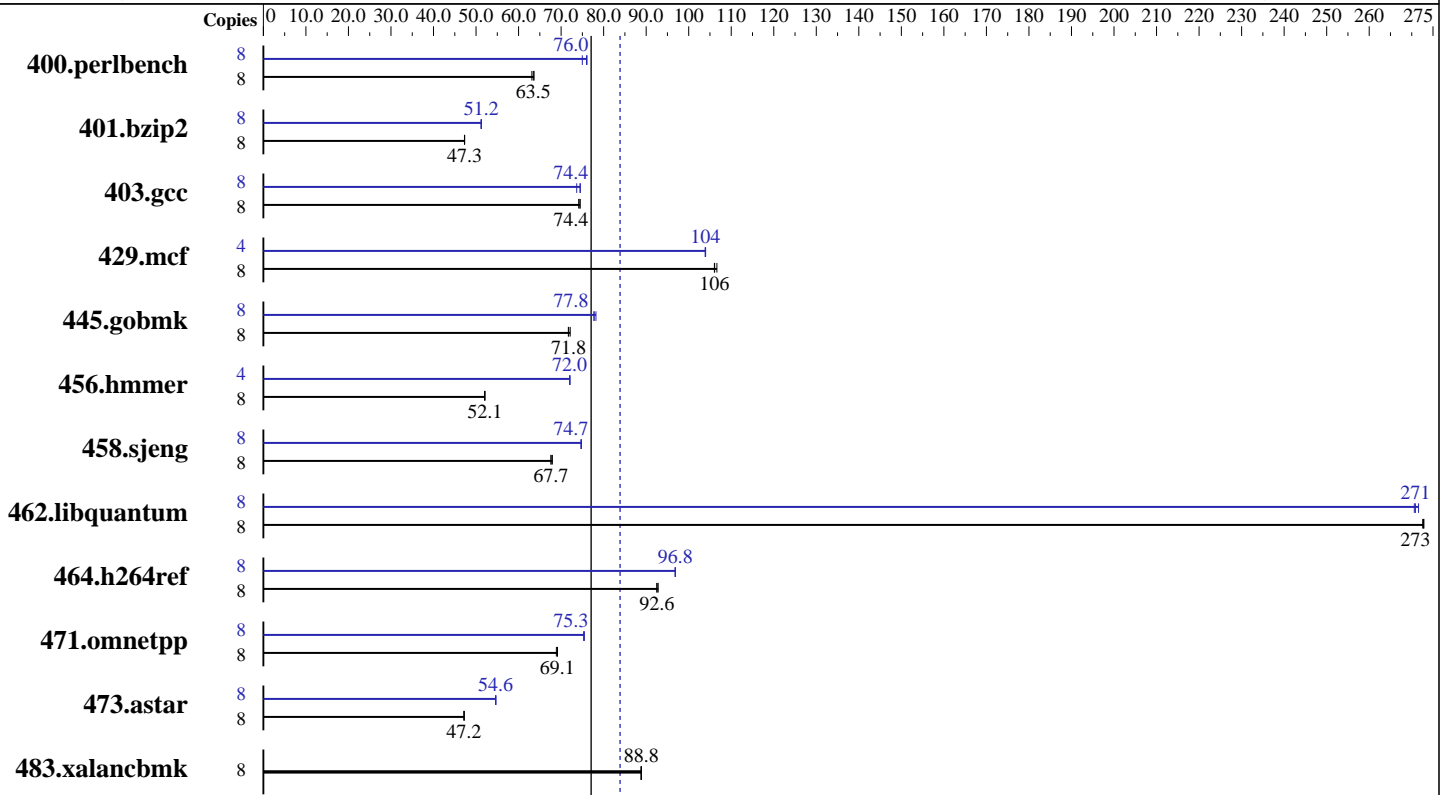
Test date: Sep-2009

Test sponsor: Dell Inc.

Hardware Availability: Sep-2009

Tested by: Dell Inc.

Software Availability: Jul-2009



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Hardware

CPU Name: Intel Xeon L3426
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
 CPU MHz: 1867
 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: I_cproc_p_11.1.040
 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 | 8 | 1238 | 63.1 | <u>1232</u> | <u>63.5</u> | 1228 | 63.6 | 8 | <u>1029</u> | <u>76.0</u> | 1027 | 76.1 | 1042 | 75.0 |
| 401.bzip2 | 8 | 1633 | 47.3 | <u>1632</u> | <u>47.3</u> | 1631 | 47.3 | 8 | 1507 | 51.2 | <u>1507</u> | <u>51.2</u> | 1507 | 51.2 |
| 403.gcc | 8 | <u>865</u> | <u>74.4</u> | 869 | 74.1 | 865 | 74.5 | 8 | <u>865</u> | <u>74.4</u> | 864 | 74.5 | 874 | 73.7 |
| 429.mcf | 8 | 684 | 107 | <u>688</u> | <u>106</u> | 688 | 106 | 4 | 351 | 104 | <u>351</u> | <u>104</u> | 351 | 104 |
| 445.gobmk | 8 | 1163 | 72.1 | <u>1169</u> | <u>71.8</u> | 1170 | 71.7 | 8 | 1080 | 77.7 | 1073 | 78.2 | <u>1079</u> | <u>77.8</u> |
| 456.hammer | 8 | 1435 | 52.0 | <u>1433</u> | <u>52.1</u> | 1433 | 52.1 | 4 | <u>518</u> | <u>72.0</u> | 518 | 72.0 | 518 | 72.1 |
| 458.sjeng | 8 | 1425 | 67.9 | <u>1431</u> | <u>67.7</u> | 1432 | 67.6 | 8 | 1296 | 74.7 | 1294 | 74.8 | <u>1295</u> | <u>74.7</u> |
| 462.libquantum | 8 | <u>608</u> | <u>273</u> | 608 | 273 | 607 | 273 | 8 | <u>612</u> | <u>271</u> | 610 | 272 | 613 | 271 |
| 464.h264ref | 8 | 1914 | 92.5 | 1907 | 92.8 | <u>1912</u> | <u>92.6</u> | 8 | <u>1828</u> | <u>96.8</u> | 1828 | 96.9 | 1828 | 96.8 |
| 471.omnetpp | 8 | 726 | 68.9 | 723 | 69.2 | <u>723</u> | <u>69.1</u> | 8 | 664 | 75.3 | 663 | 75.5 | <u>664</u> | <u>75.3</u> |
| 473.astar | 8 | 1191 | 47.2 | 1189 | 47.2 | <u>1190</u> | <u>47.2</u> | 8 | <u>1028</u> | <u>54.6</u> | 1027 | 54.7 | 1029 | 54.6 |
| 483.xalancbmk | 8 | 621 | 88.9 | 622 | 88.8 | <u>621</u> | <u>88.8</u> | 8 | 621 | 88.9 | 622 | 88.8 | <u>621</u> | <u>88.8</u> |

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

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

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

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

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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) -opt-prefetch -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: -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.

Tested with SPEC CPU2006 v1.1.

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