



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®\_rate2006 = 200

PowerEdge R510 (Intel Xeon E5520, 2.26 GHz)

SPECint\_rate\_base2006 = 186

CPU2006 license: 55

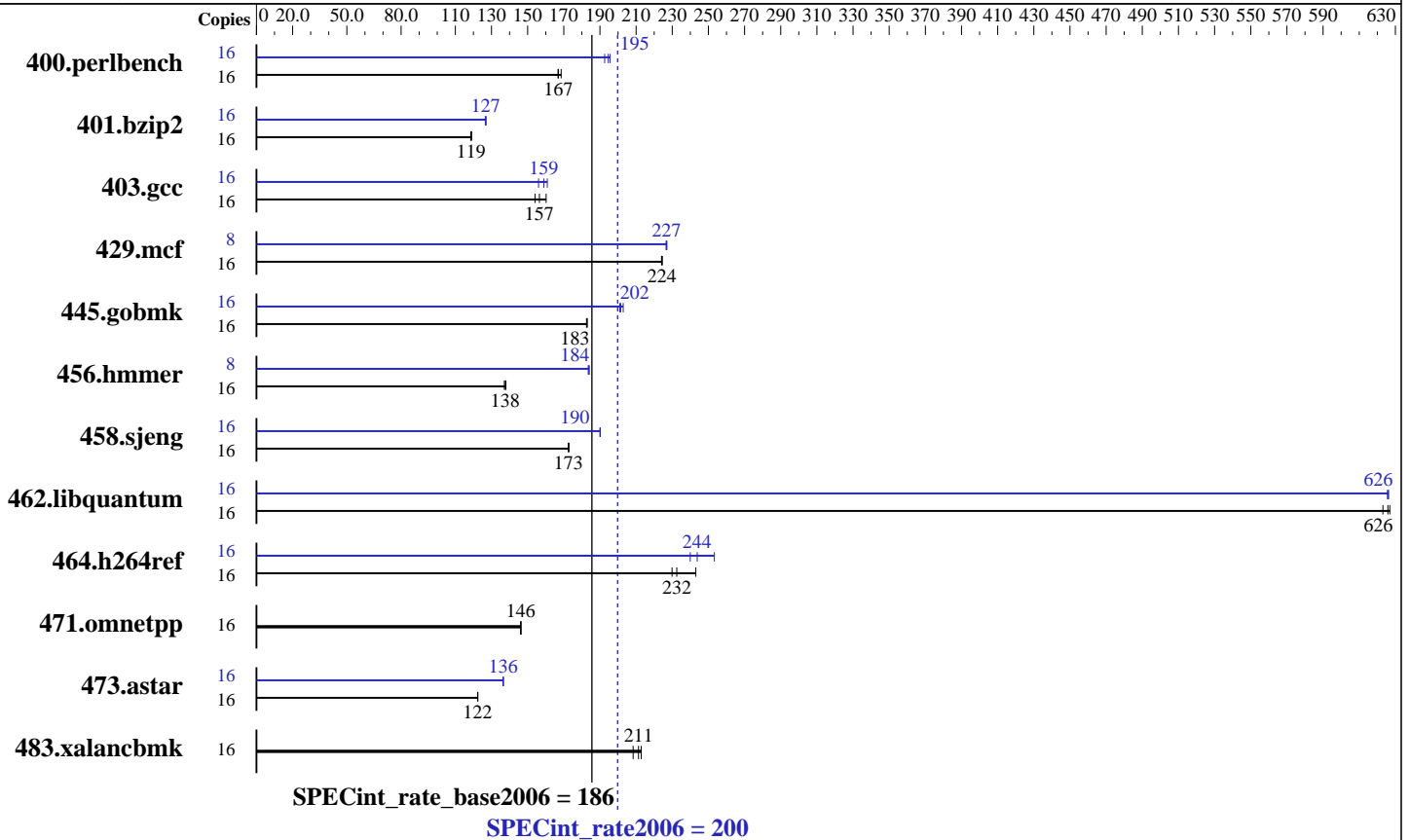
Test date: Aug-2009

Test sponsor: Dell Inc.

Hardware Availability: Oct-2009

Tested by: Dell Inc.

Software Availability: Feb-2009



## Hardware

CPU Name: Intel Xeon E5520  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz  
 CPU MHz: 2267  
 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 DDR3-1333 DR RDIMM downclocked to 1066 MHz)  
 Disk Subsystem: 1 x 500 GB 7200 RPM SATA  
 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     | <b>936</b> | <b>167</b> | 927         | 169        | 937         | 167        | 16     | 812        | 193        | <b>803</b>  | <b>195</b> | 799         | 196        |
| 401.bzip2      | 16     | 1303       | 119        | 1297        | 119        | <b>1301</b> | <b>119</b> | 16     | 1216       | 127        | 1220        | 127        | <b>1217</b> | <b>127</b> |
| 403.gcc        | 16     | 804        | 160        | <b>823</b>  | <b>157</b> | 836         | 154        | 16     | 825        | 156        | 801         | 161        | <b>810</b>  | <b>159</b> |
| 429.mcf        | 16     | 651        | 224        | <b>650</b>  | <b>224</b> | 650         | 224        | 8      | 321        | 227        | <b>322</b>  | <b>227</b> | 322         | 227        |
| 445.gobmk      | 16     | 917        | 183        | <b>918</b>  | <b>183</b> | 919         | 183        | 16     | 835        | 201        | 827         | 203        | <b>833</b>  | <b>202</b> |
| 456.hammer     | 16     | 1082       | 138        | <b>1084</b> | <b>138</b> | 1089        | 137        | 8      | 406        | 184        | 407         | 184        | <b>406</b>  | <b>184</b> |
| 458.sjeng      | 16     | 1120       | 173        | 1122        | 173        | <b>1121</b> | <b>173</b> | 16     | 1019       | 190        | <b>1018</b> | <b>190</b> | 1018        | 190        |
| 462.libquantum | 16     | <b>530</b> | <b>626</b> | 529         | 627        | 532         | 623        | 16     | 530        | 626        | <b>530</b>  | <b>626</b> | 529         | 626        |
| 464.h264ref    | 16     | 1540       | 230        | 1457        | 243        | <b>1523</b> | <b>232</b> | 16     | 1476       | 240        | 1398        | 253        | <b>1452</b> | <b>244</b> |
| 471.omnetpp    | 16     | <b>684</b> | <b>146</b> | 684         | 146        | 684         | 146        | 16     | <b>684</b> | <b>146</b> | 684         | 146        | 684         | 146        |
| 473.astar      | 16     | 918        | 122        | <b>918</b>  | <b>122</b> | 918         | 122        | 16     | <b>823</b> | <b>136</b> | 823         | 136        | 822         | 137        |
| 483.xalancbmk  | 16     | <b>522</b> | <b>211</b> | 519         | 213        | 530         | 208        | 16     | <b>522</b> | <b>211</b> | 519         | 213        | 530         | 208        |

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

## Base Compiler Invocation

C benchmarks:  
icc  
  
C++ benchmarks:  
icpc

## Base Portability Flags

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



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## 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

```
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
```



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## 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 -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 -lsmarheap64

483.xalancbmk: basepeak = yes



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## 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-ic11.0-int-linux64-revA.20090805.01.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.20090805.01.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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