



# SPEC® CINT2006 Result

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## Fujitsu Siemens Computers

## SPECint®\_rate2006 = 128

### CELSIUS R650, Intel Xeon X5450 processor

## SPECint\_rate\_base2006 = 110

CPU2006 license: 22

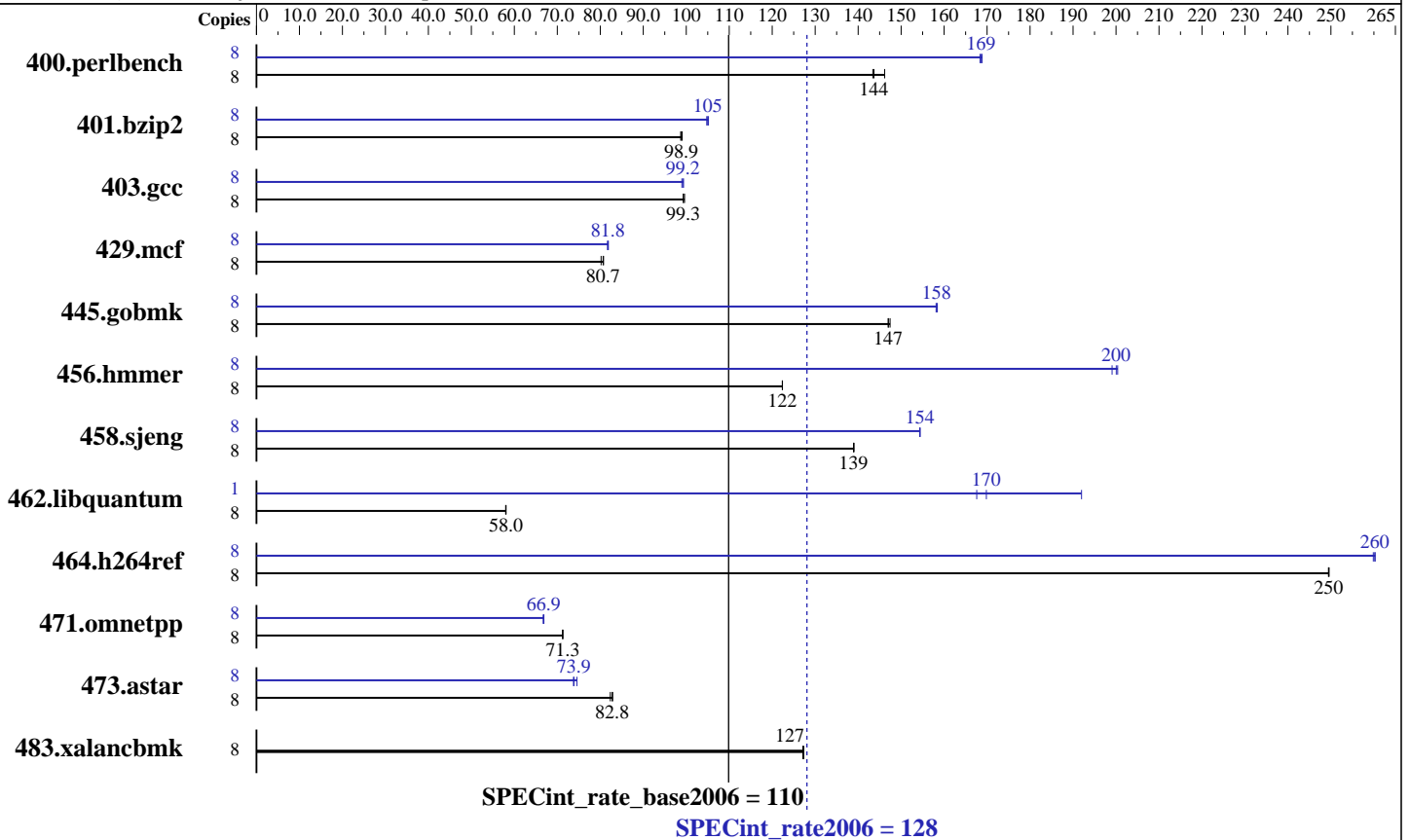
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Dec-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5450  
 CPU Characteristics:  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (8x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1 x 400 GB SATA II 7200 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ Compiler for Linux32 and Linux64, Version 10.1, Build 20070913  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Multi-User, Run Level 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap Library, Version 8.1  
 binutils-2.17.50.0.5-0.1.x86\_64



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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      | 535         | 146         | 545        | 143        | <b>544</b> | <b>144</b>  | 8      | <b>464</b> | <b>169</b>  | 463        | 169         | 464        | 168        |
| 401.bzip2      | 8      | <b>781</b>  | <b>98.9</b> | 779        | 99.0       | 782        | 98.7        | 8      | <b>735</b> | <b>105</b>  | 734        | 105         | 737        | 105        |
| 403.gcc        | 8      | 647         | 99.6        | 648        | 99.3       | <b>648</b> | <b>99.3</b> | 8      | 648        | 99.4        | <b>649</b> | <b>99.2</b> | 651        | 99.0       |
| 429.mcf        | 8      | 903         | 80.8        | 910        | 80.2       | <b>905</b> | <b>80.7</b> | 8      | <b>892</b> | <b>81.8</b> | 893        | 81.7        | 891        | 81.9       |
| 445.gobmk      | 8      | 571         | 147         | <b>571</b> | <b>147</b> | 569        | 147         | 8      | 530        | 158         | <b>530</b> | <b>158</b>  | 531        | 158        |
| 456.hmmer      | 8      | 610         | 122         | 610        | 122        | <b>610</b> | <b>122</b>  | 8      | 375        | 199         | 372        | 200         | <b>373</b> | <b>200</b> |
| 458.sjeng      | 8      | 696         | 139         | 697        | 139        | <b>697</b> | <b>139</b>  | 8      | 627        | 154         | <b>627</b> | <b>154</b>  | 627        | 154        |
| 462.libquantum | 8      | <b>2856</b> | <b>58.0</b> | 2859       | 58.0       | 2854       | 58.1        | 1      | <b>122</b> | <b>170</b>  | 124        | 168         | 108        | 192        |
| 464.h264ref    | 8      | 709         | 250         | <b>710</b> | <b>250</b> | 710        | 249         | 8      | 680        | 260         | 681        | 260         | <b>680</b> | <b>260</b> |
| 471.omnetpp    | 8      | 702         | 71.2        | 702        | 71.3       | <b>702</b> | <b>71.3</b> | 8      | <b>748</b> | <b>66.9</b> | 748        | 66.9        | 750        | 66.7       |
| 473.astar      | 8      | 678         | 82.9        | 682        | 82.3       | <b>679</b> | <b>82.8</b> | 8      | 761        | 73.8        | <b>760</b> | <b>73.9</b> | 753        | 74.6       |
| 483.xalancbmk  | 8      | 434         | 127         | 433        | 127        | <b>434</b> | <b>127</b>  | 8      | 434        | 127         | 433        | 127         | <b>434</b> | <b>127</b> |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores (default).

## Platform Notes

BIOS configuration:  
Enhanced Speedstep Technology = Disable  
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable  
SnoopFilter = Enable

## General Notes

All binaries were built with 32-bit Intel compiler except:  
401.bzip2 and 456.hmmer in peak were built with 64-bit Intel compiler by changing the path for include and library files.

For information about Fujitsu Siemens Computers please see:  
<http://www.fujitsu-siemens.com>

## Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:  
-fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/opt/SmartHeap\_8.1/lib -lsmarheap

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:  
icpc



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## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
 401.bzip2: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LINUX  
 483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
 -prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch  
 -opt-streaming-stores always -vec-guard-write  
 -opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
 -no-prec-div -ansi-alias -opt-ra-region-strategy=block

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine

483.xalancbmk: basepeak = yes



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## Peak Other Flags

Same as Base Other Flags

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.03.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.03.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).

Tested with SPEC CPU2006 v1.0.  
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