



# SPEC® CINT2006 Result

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## Fujitsu Siemens Computers

### SPECint®\_rate2006 = 150

PRIMERGY RX200 S4, Intel Xeon X5470, 3.33 GHz

### SPECint\_rate\_base2006 = 137

CPU2006 license: 22

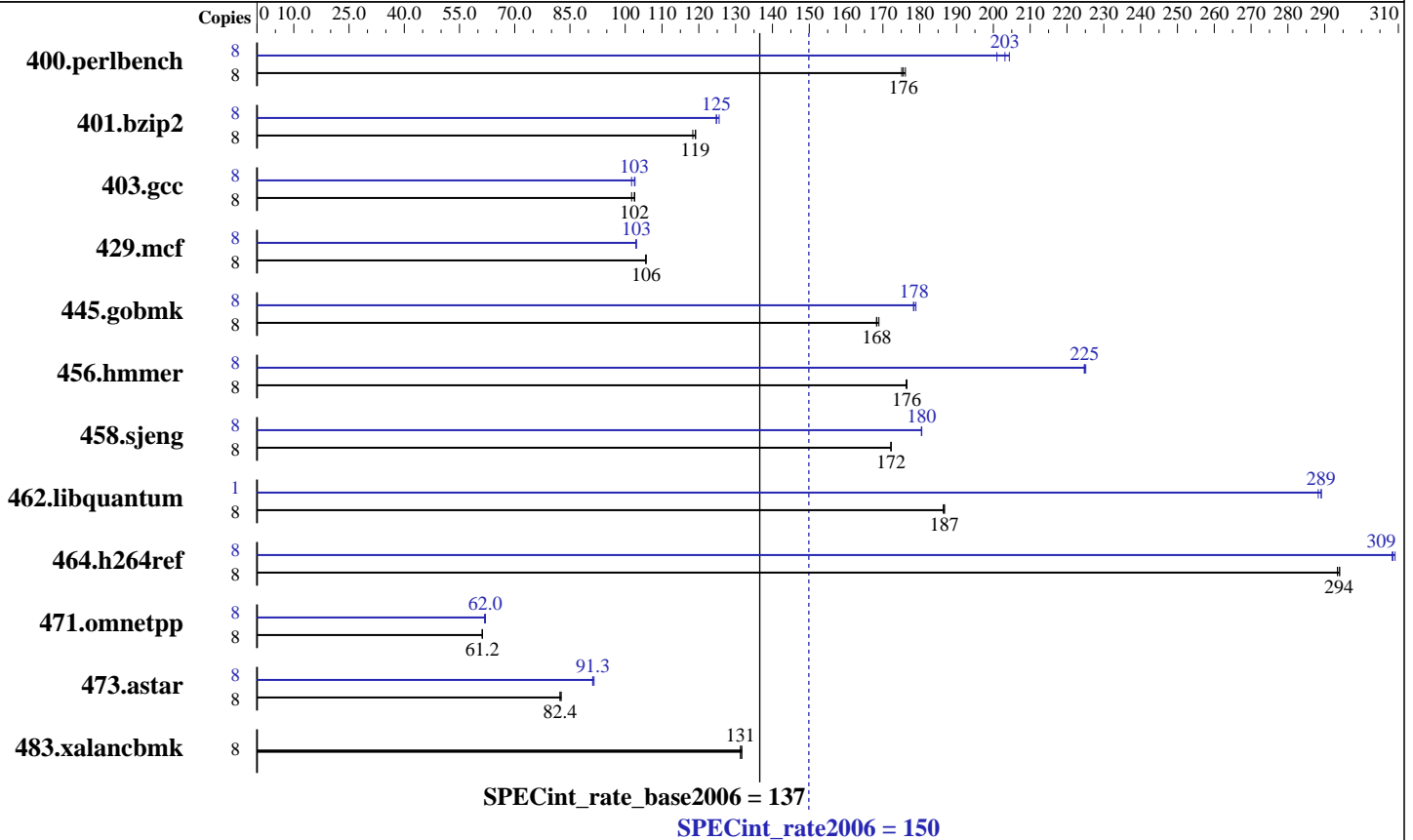
Test date: Nov-2008

Test sponsor: Fujitsu Siemens Computers

Hardware Availability: Oct-2008

Tested by: Fujitsu Siemens Computers

Software Availability: Aug-2008



### Hardware

CPU Name: Intel Xeon X5470  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 3333  
 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: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x SATA, 80 GB, 7200 rpm  
 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 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042  
 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 2.18.50.0.7.20080502



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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	<b>445</b>	<b>176</b>	446	175	444	176	8	389	201	383	204	<b>385</b>	<b>203</b>
401.bzip2	8	<b>648</b>	<b>119</b>	652	118	648	119	8	619	125	<b>619</b>	<b>125</b>	615	126
403.gcc	8	<b>628</b>	<b>102</b>	628	103	633	102	8	<b>628</b>	<b>103</b>	627	103	633	102
429.mcf	8	691	106	<b>691</b>	<b>106</b>	690	106	8	709	103	708	103	<b>708</b>	<b>103</b>
445.gobmk	8	<b>498</b>	<b>168</b>	497	169	499	168	8	<b>470</b>	<b>178</b>	471	178	469	179
456.hmmer	8	423	176	<b>423</b>	<b>176</b>	423	177	8	332	225	<b>332</b>	<b>225</b>	332	225
458.sjeng	8	562	172	562	172	<b>562</b>	<b>172</b>	8	536	181	536	180	<b>536</b>	<b>180</b>
462.libquantum	8	889	186	888	187	<b>888</b>	<b>187</b>	1	<b>71.7</b>	<b>289</b>	71.7	289	71.9	288
464.h264ref	8	<b>602</b>	<b>294</b>	602	294	603	293	8	574	308	<b>574</b>	<b>309</b>	573	309
471.omnetpp	8	<b>817</b>	<b>61.2</b>	817	61.2	817	61.2	8	<b>806</b>	<b>62.0</b>	806	62.0	809	61.8
473.astar	8	682	82.3	680	82.6	<b>682</b>	<b>82.4</b>	8	<b>615</b>	<b>91.3</b>	613	91.5	616	91.2
483.xalancbmk	8	419	132	<b>420</b>	<b>131</b>	420	131	8	419	132	<b>420</b>	<b>131</b>	420	131

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

## Compiler Invocation Notes

All binaries were built with 32-bit moder except:  
401.bzip2 and 456.hmmer in peak were built with 64-bit mode.

## 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  
OMP\_NUM\_THREADS set to number of cores (default)  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 64M

## Platform Notes

BIOS configuration:  
Adjacent Sector Prefetch = Disable  
Memory Throttling = Enable

## General Notes

taskset has been used to bind processes to cores except  
for 462.libquantum peak

For information about Fujitsu Siemens Computers please see:  
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## General Notes (Continued)

<http://www.fujitsu-siemens.com>

## 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

## Base Optimization Flags

C benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:

-xSSE4.1 -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/11.0/042/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

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## Peak Compiler Invocation (Continued)

```
456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
           -L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
           -I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

C++ benchmarks:  
icpc

## 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) -xSSE4.1 -ipo -O3
              -no-prec-div -static -ansi-alias -opt-prefetch

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
         -opt-malloc-options=3

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
         -no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
          -no-prec-div -ansi-alias

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
          -ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
          -no-prec-div -static -unroll4

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static
               -opt-malloc-options=3 -parallel -par-runtime-control
               -opt-prefetch

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
            -no-prec-div -static -unroll2 -ansi-alias
```

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## Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -ansi-alias -opt-ra-region-strategy=block  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmarheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmarheap

483.xalancbmk: basepeak = yes

## 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-ic10.1-int-linux64-revD.20090714.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revD.20090714.xml>

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

Tested with SPEC CPU2006 v1.1.

Report generated on Mon Jul 13 21:08:02 2009 by SPEC CPU2006 PS/PDF formatter v6323.