



# SPEC<sup>®</sup> CINT2006 Result

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NTT System S. A.  
NTT Tytan 516I

SPECint<sup>®</sup>\_rate2006 = 77.8  
SPECint\_rate\_base2006 = 73.4

CPU2006 license: 9013

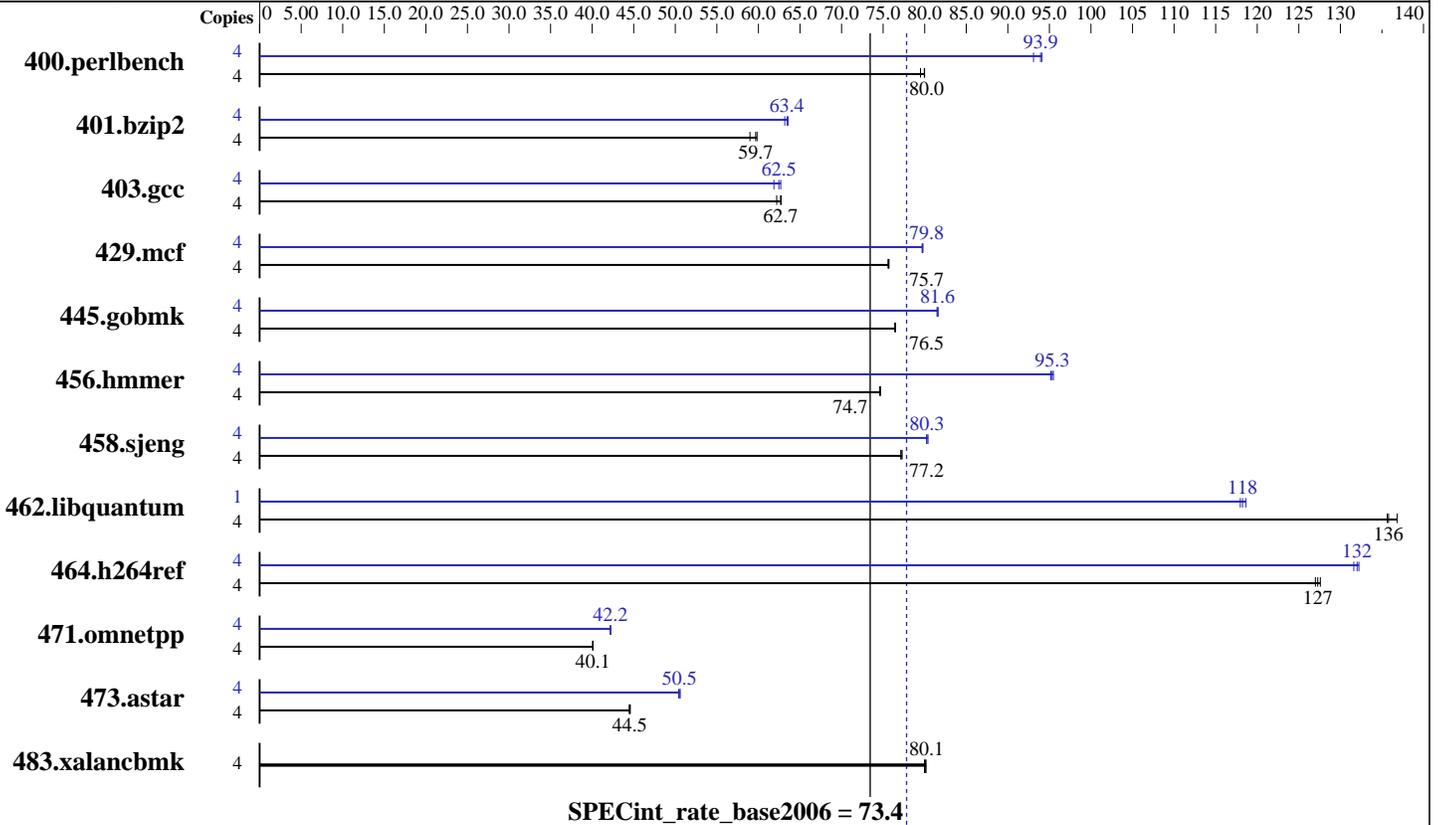
Test sponsor: NTT System S. A.

Tested by: NTT System S. A.

Test date: Dec-2008

Hardware Availability: Dec-2008

Software Availability: Dec-2008



## Hardware

CPU Name: Intel Xeon X3360  
 CPU Characteristics: 2.83 GHz, 2x6 MB P2 shared, 1333 MHz System Bus  
 CPU MHz: 2833  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 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 (4x2GB)  
 Disk Subsystem: 400 GB SATA, 7200RPM  
 Other Hardware: None

## Software

Operating System: SuSe Linux SLES10 SP1, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ Compiler 11.0 for Linux  
 Build 20080930 Package ID: l\_cproc\_p\_11.0.066  
 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	492	79.5	<b><u>489</u></b>	<b><u>80.0</u></b>	489	80.0	4	420	93.1	<b><u>416</u></b>	<b><u>93.9</u></b>	415	94.1
401.bzip2	4	654	59.0	<b><u>647</u></b>	<b><u>59.7</u></b>	645	59.8	4	611	63.2	607	63.6	<b><u>608</u></b>	<b><u>63.4</u></b>
403.gcc	4	518	62.2	513	62.7	<b><u>514</u></b>	<b><u>62.7</u></b>	4	520	61.9	514	62.7	<b><u>516</u></b>	<b><u>62.5</u></b>
429.mcf	4	483	75.6	<b><u>482</u></b>	<b><u>75.7</u></b>	482	75.7	4	<b><u>457</u></b>	<b><u>79.8</u></b>	457	79.8	458	79.7
445.gobmk	4	<b><u>549</u></b>	<b><u>76.5</u></b>	549	76.4	549	76.5	4	<b><u>515</u></b>	<b><u>81.6</u></b>	514	81.6	515	81.5
456.hammer	4	500	74.7	<b><u>500</u></b>	<b><u>74.7</u></b>	500	74.6	4	<b><u>391</u></b>	<b><u>95.3</u></b>	392	95.2	391	95.5
458.sjeng	4	<b><u>627</u></b>	<b><u>77.2</u></b>	626	77.3	628	77.1	4	<b><u>603</u></b>	<b><u>80.3</u></b>	602	80.4	603	80.2
462.libquantum	4	611	136	<b><u>610</u></b>	<b><u>136</u></b>	606	137	1	<b><u>175</u></b>	<b><u>118</u></b>	175	119	176	118
464.h264ref	4	697	127	<b><u>695</u></b>	<b><u>127</u></b>	694	128	4	673	132	<b><u>671</u></b>	<b><u>132</u></b>	669	132
471.omnetpp	4	623	40.1	<b><u>624</u></b>	<b><u>40.1</u></b>	624	40.1	4	592	42.2	592	42.2	<b><u>592</u></b>	<b><u>42.2</u></b>
473.astar	4	<b><u>631</u></b>	<b><u>44.5</u></b>	632	44.5	630	44.6	4	555	50.6	<b><u>556</u></b>	<b><u>50.5</u></b>	557	50.4
483.xalancbmk	4	345	80.0	<b><u>345</u></b>	<b><u>80.1</u></b>	344	80.2	4	345	80.0	<b><u>345</u></b>	<b><u>80.1</u></b>	344	80.2

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.  
 taskset was used to bind processes to cores except  
 for 462.libquantum peak  
 OMP\_NUM\_THREADS set to number of processors  
 KMP\_AFFINITY set to "physical,0"  
 KMP\_STACKSIZE set to 64M

## 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:  
-xSSSE3 -ipo -O3 -no-prec-div -static -inline-alloc  
-opt-malloc-options=3 -opt-prefetch  
C++ benchmarks:  
-xSSSE3 -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/11.0/066/bin/intel64/icc  
456.hmmer: /opt/intel/Compiler/11.0/066/bin/intel64/icc  
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) -xSSSE3 -ipo -O3  
-no-prec-div -static -ansi-alias -opt-prefetch

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## Peak Optimization Flags (Continued)

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -opt-prefetch -ansi-alias

403.gcc: -xSSSE3 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -O2 -ipo  
-no-prec-div -ansi-alias

456.hmmer: -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll4

462.libquantum: -xSSSE3 -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) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -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) -xSSSE3 -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

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.html>

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.01.html>



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You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.01.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 Tue Jul 22 22:46:06 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 12 January 2009.