



# SPEC<sup>®</sup> CINT2006 Result

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## IBM Corporation

SPECint<sup>®</sup>\_rate2006 = 97.6

### IBM System x3650 M3 (Intel Xeon L5630)

SPECint\_rate\_base2006 = 91.5

CPU2006 license: 11

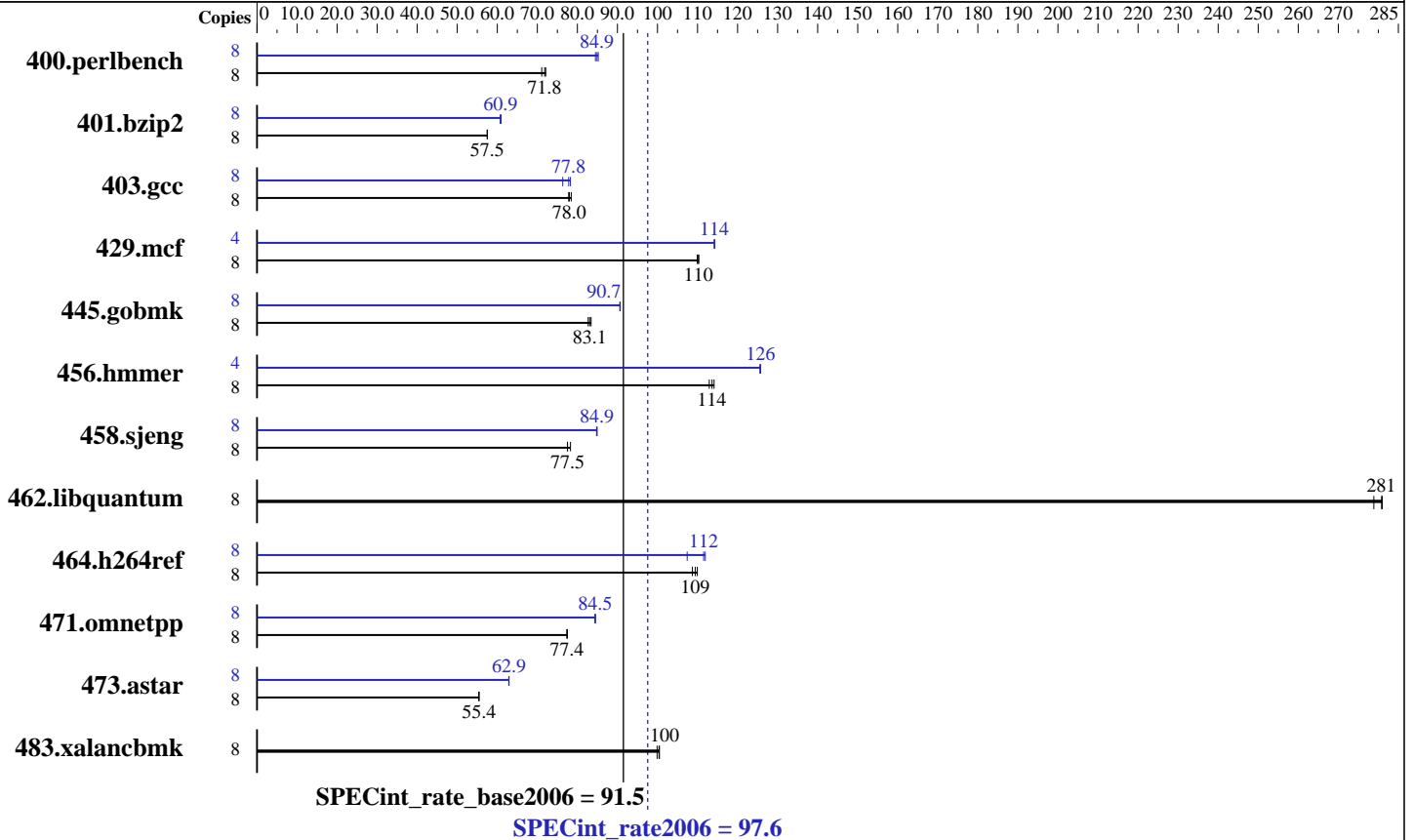
Test date: Apr-2010

Test sponsor: IBM Corporation

Hardware Availability: Jun-2010

Tested by: IBM Corporation

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon L5630  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2133  
 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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6 x 4 GB PC3-10600R-ECC, CL9)  
 Disk Subsystem: 1 x 73 GB SAS, 15000RPM  
 Other Hardware: None

### Software

Operating System: SuSe Linux Enterprise Server 11 (x86\_64)  
 Kernel 2.6.27.19-5-default  
 Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1  
 Build 20091130 Package ID: l\_cproc\_p\_11.1.064  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1



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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	1084	72.1	<b>1088</b>	<b>71.8</b>	1099	71.1	8	<b>921</b>	<b>84.9</b>	925	84.5	917	85.2
401.bzip2	8	1342	57.5	<b>1342</b>	<b>57.5</b>	1343	57.5	8	1271	60.7	1266	61.0	<b>1268</b>	<b>60.9</b>
403.gcc	8	827	77.8	<b>826</b>	<b>78.0</b>	821	78.5	8	844	76.3	823	78.3	<b>827</b>	<b>77.8</b>
429.mcf	8	<b>662</b>	<b>110</b>	664	110	661	110	4	319	114	<b>319</b>	<b>114</b>	320	114
445.gobmk	8	<b>1010</b>	<b>83.1</b>	1006	83.4	1015	82.7	8	926	90.6	<b>926</b>	<b>90.7</b>	925	90.7
456.hammer	8	661	113	654	114	<b>657</b>	<b>114</b>	4	297	126	<b>297</b>	<b>126</b>	297	126
458.sjeng	8	1237	78.3	1249	77.5	<b>1248</b>	<b>77.5</b>	8	<b>1140</b>	<b>84.9</b>	1140	84.9	1142	84.8
462.libquantum	8	590	281	594	279	<b>590</b>	<b>281</b>	8	590	281	594	279	<b>590</b>	<b>281</b>
464.h264ref	8	1610	110	<b>1618</b>	<b>109</b>	1628	109	8	1582	112	1648	107	<b>1587</b>	<b>112</b>
471.omnetpp	8	645	77.5	<b>646</b>	<b>77.4</b>	646	77.4	8	592	84.5	<b>592</b>	<b>84.5</b>	593	84.4
473.astar	8	<b>1013</b>	<b>55.4</b>	1013	55.4	1014	55.4	8	893	62.9	<b>893</b>	<b>62.9</b>	892	62.9
483.xalancbmk	8	<b>550</b>	<b>100</b>	549	100	553	99.9	8	<b>550</b>	<b>100</b>	549	100	553	99.9

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

## Platform Notes

Turbo Mode Enable  
Turbo Boost set to Traditional  
CPU C State Enable  
Data Reuse Disable

## General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502  
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

## 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 -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -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  
458.sjeng: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

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

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

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -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: basepeak = yes

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

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 -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64

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## Peak Optimization Flags (Continued)

483.xalanbmk: 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-linux64-revE.20100601.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100601.xml>

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

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