



# SPEC® CINT2006 Result

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## IBM Corporation

**SPECint®2006 = 21.3**

## IBM System x3550 M2 (Intel Xeon E5504)

**SPECint\_base2006 = 19.2**

CPU2006 license: 11

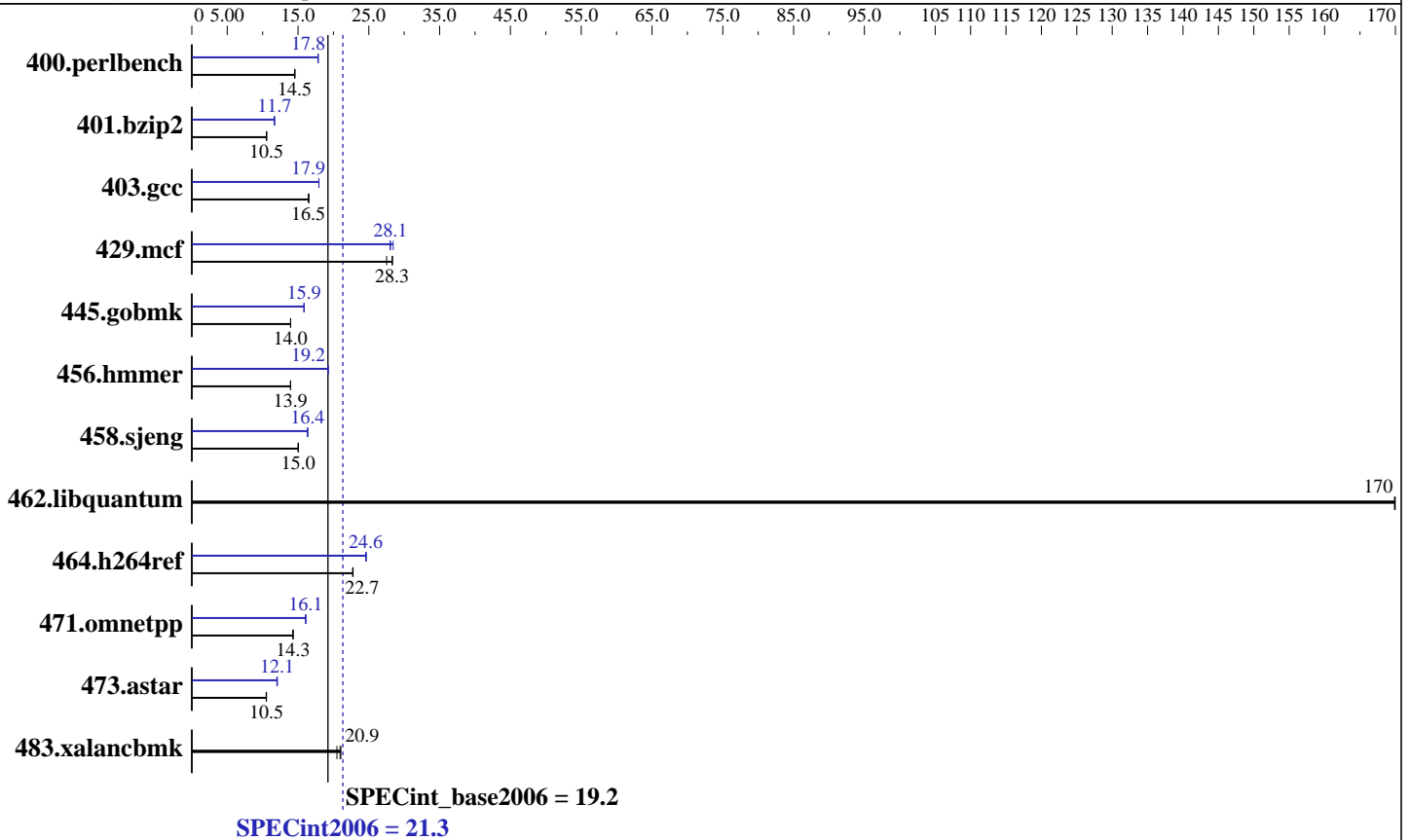
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon E5504  
 CPU Characteristics:  
 CPU MHz: 2000  
 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: 256 KB I+D on chip per core  
 L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (12 x 2 GB PC3-10600R, 2 Rank, running at 800 MHz)  
 Disk Subsystem: 1 x 73 GB SAS, 15000 RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux Enterprise Server 10 (x86\_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp  
 Compiler: Intel C++ Compiler Professional 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>672</u></b>	<b><u>14.5</u></b>	672	14.5	672	14.5	<b><u>548</u></b>	<b><u>17.8</u></b>	548	17.8	547	17.9
401.bzip2	<b><u>915</u></b>	<b><u>10.5</u></b>	912	10.6	916	10.5	<b><u>826</u></b>	<b><u>11.7</u></b>	826	11.7	829	11.6
403.gcc	488	16.5	487	16.5	<b><u>488</u></b>	<b><u>16.5</u></b>	449	17.9	448	18.0	<b><u>449</u></b>	<b><u>17.9</u></b>
429.mcf	331	27.5	322	28.4	<b><u>323</u></b>	<b><u>28.3</u></b>	326	28.0	321	28.4	<b><u>325</u></b>	<b><u>28.1</u></b>
445.gobmk	751	14.0	<b><u>752</u></b>	<b><u>14.0</u></b>	752	13.9	662	15.9	661	15.9	<b><u>662</u></b>	<b><u>15.9</u></b>
456.hammer	<b><u>669</u></b>	<b><u>13.9</u></b>	669	13.9	669	13.9	<b><u>485</u></b>	<b><u>19.2</u></b>	485	19.2	485	19.2
458.sjeng	804	15.0	<b><u>805</u></b>	<b><u>15.0</u></b>	806	15.0	740	16.3	<b><u>740</u></b>	<b><u>16.4</u></b>	739	16.4
462.libquantum	122	170	<b><u>122</u></b>	<b><u>170</u></b>	122	170	122	170	<b><u>122</u></b>	<b><u>170</u></b>	122	170
464.h264ref	974	22.7	971	22.8	<b><u>973</u></b>	<b><u>22.7</u></b>	<b><u>901</u></b>	<b><u>24.6</u></b>	901	24.6	898	24.6
471.omnetpp	437	14.3	<b><u>437</u></b>	<b><u>14.3</u></b>	438	14.3	389	16.1	<b><u>389</u></b>	<b><u>16.1</u></b>	388	16.1
473.astar	666	10.5	<b><u>666</u></b>	<b><u>10.5</u></b>	668	10.5	582	12.1	584	12.0	<b><u>582</u></b>	<b><u>12.1</u></b>
483.xalancbmk	337	20.5	328	21.1	<b><u>329</u></b>	<b><u>20.9</u></b>	337	20.5	328	21.1	<b><u>329</u></b>	<b><u>20.9</u></b>

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

## General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
Processor CPU C-States Enabled

## 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 -parallel  
-par-runtime-control -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) -auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-alloc  
 -opt-malloc-options=3

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/spec/cpu2006.1.1/lib -lsmarheap

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.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.xml>

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

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