



# SPEC® CINT2006 Result

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## IBM Corporation

**SPECint®2006 = 22.4**

IBM System x iDataPlex dx360 (Intel Xeon L5410)

**SPECint\_base2006 = 19.7**

CPU2006 license: 11

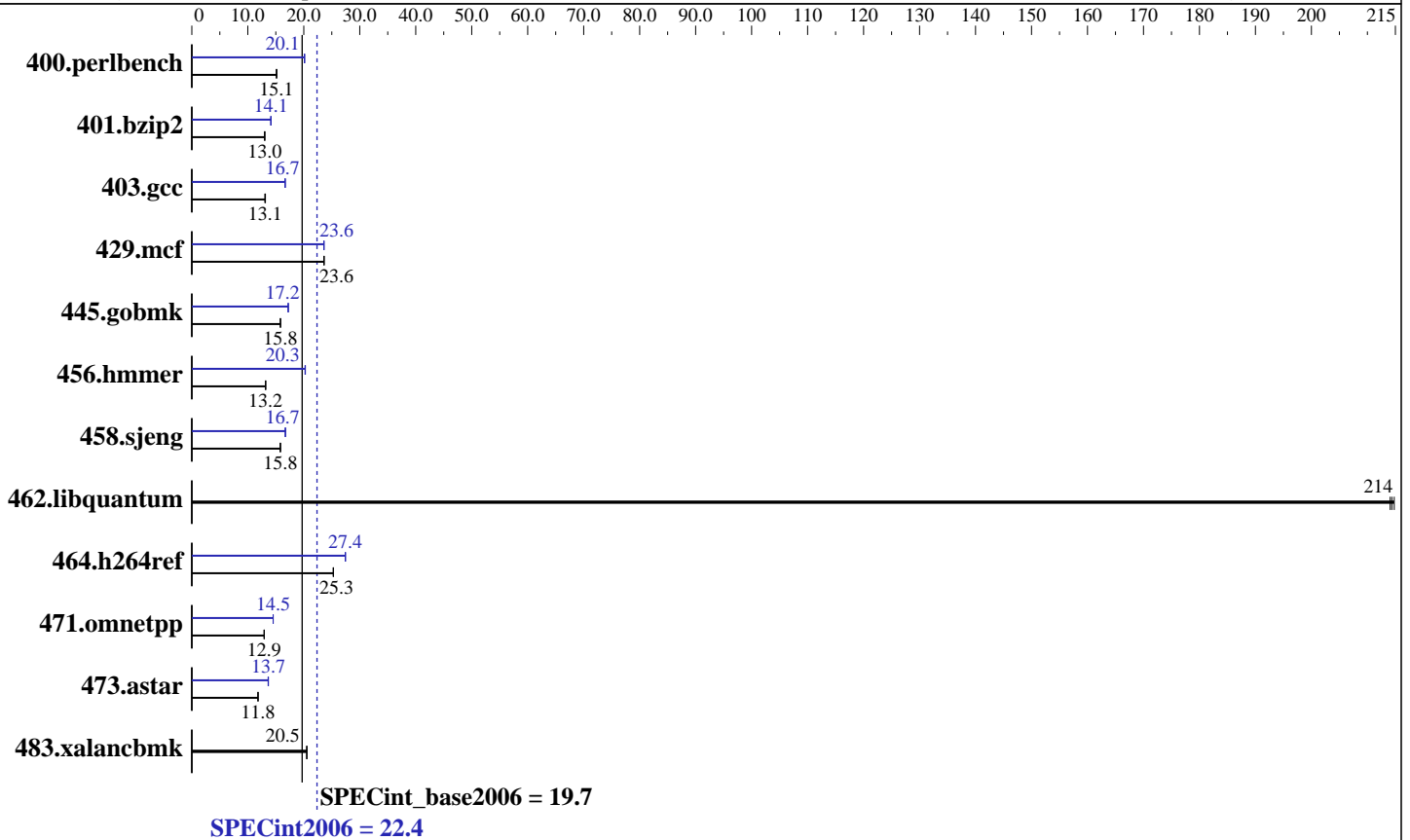
Test date: Apr-2009

Test sponsor: IBM Corporation

Hardware Availability: Nov-2008

Tested by: IBM Corporation

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon L5410  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 2333  
 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 (8 x 2 GB DDR2-5300F ECC)  
 Disk Subsystem: 1 x 250 GB SATA, 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 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>646</b>	<b>15.1</b>	644	15.2	647	15.1	486	20.1	484	20.2	<b>485</b>	<b>20.1</b>
401.bzip2	739	13.1	<b>740</b>	<b>13.0</b>	743	13.0	<b>683</b>	<b>14.1</b>	684	14.1	682	14.1
403.gcc	612	13.1	617	13.0	<b>613</b>	<b>13.1</b>	483	16.7	483	16.7	<b>483</b>	<b>16.7</b>
429.mcf	387	23.6	<b>386</b>	<b>23.6</b>	386	23.6	386	23.6	387	23.6	<b>386</b>	<b>23.6</b>
445.gobmk	<b>663</b>	<b>15.8</b>	663	15.8	662	15.8	<b>609</b>	<b>17.2</b>	609	17.2	609	17.2
456.hammer	<b>708</b>	<b>13.2</b>	708	13.2	707	13.2	<b>460</b>	<b>20.3</b>	461	20.2	460	20.3
458.sjeng	<b>765</b>	<b>15.8</b>	767	15.8	763	15.9	723	16.7	725	16.7	<b>724</b>	<b>16.7</b>
462.libquantum	<b>96.7</b>	<b>214</b>	96.8	214	96.5	215	<b>96.7</b>	<b>214</b>	96.8	214	96.5	215
464.h264ref	<b>875</b>	<b>25.3</b>	875	25.3	876	25.3	806	27.5	807	27.4	<b>807</b>	<b>27.4</b>
471.omnetpp	483	12.9	<b>483</b>	<b>12.9</b>	483	12.9	430	14.5	430	14.5	<b>430</b>	<b>14.5</b>
473.astar	594	11.8	594	11.8	<b>594</b>	<b>11.8</b>	515	13.6	513	13.7	<b>514</b>	<b>13.7</b>
483.xalancbmk	336	20.5	336	20.6	<b>336</b>	<b>20.5</b>	336	20.5	336	20.6	<b>336</b>	<b>20.5</b>

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

## General Notes

Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Enable  
OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"

## 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 -parallel  
-par-runtime-control -opt-prefetch

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## Base Optimization Flags (Continued)

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/11.0/066/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) -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 -auto-ilp32 -opt-prefetch  
-ansi-alias

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## Peak Optimization Flags (Continued)

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

429.mcf: -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 -auto-ilp32

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

462.libquantum: basepeak = yes

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

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 -lsmartheap

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 -lsmartheap

483.xalancbmk: 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-ic11.0-int-linux64-revA.20090710.17.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.20090710.17.xml>



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

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