



# SPEC® CINT2006 Result

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**IBM Corporation**

**SPECint\_rate2006 = 260**

IBM BladeCenter HS22V (Intel Xeon L5638)

**SPECint\_rate\_base2006 = 243**

CPU2006 license: 11

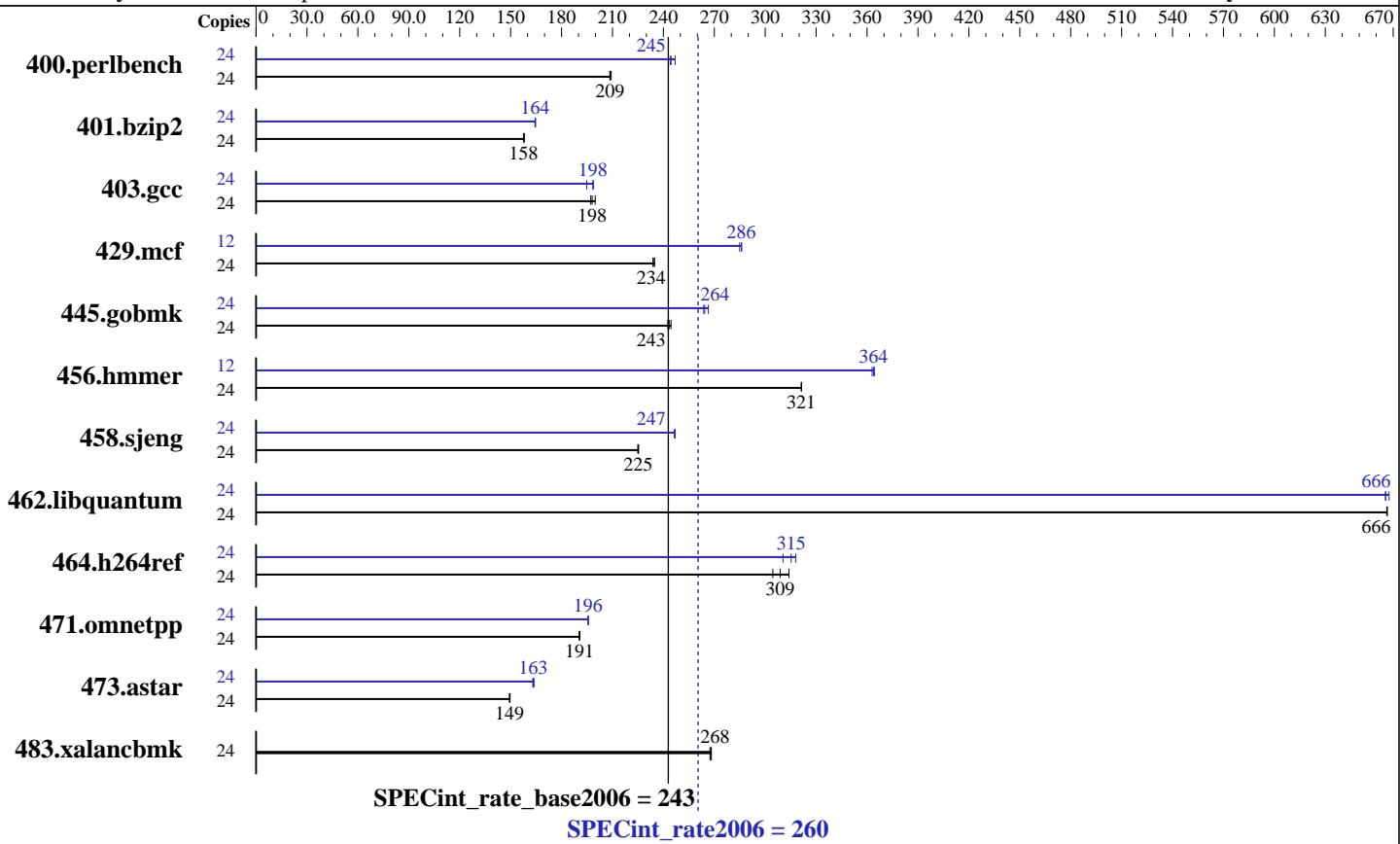
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2010

Hardware Availability: Aug-2010

Software Availability: Jan-2010



## Hardware

CPU Name: Intel Xeon L5638  
CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
CPU MHz: 2000  
FPU: Integrated  
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
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: 12 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12 x 4 GB PC3-10600R CL9, 2 Rank)  
Disk Subsystem: 2 x 50 GB SATA, SSD, Raid 0  
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	24	<b><u>1124</u></b>	<b><u>209</u></b>	1121	209	1125	208	24	950	247	<b><u>959</u></b>	<b><u>245</u></b>	961	244
401.bzip2	24	1469	158	1465	158	<b><u>1469</u></b>	<b><u>158</u></b>	24	1406	165	1409	164	<b><u>1408</u></b>	<b><u>164</u></b>
403.gcc	24	<b><u>976</u></b>	<b><u>198</u></b>	980	197	967	200	24	992	195	972	199	<b><u>974</u></b>	<b><u>198</u></b>
429.mcf	24	936	234	<b><u>935</u></b>	<b><u>234</u></b>	932	235	12	<b><u>383</u></b>	<b><u>286</u></b>	383	286	384	285
445.gobmk	24	<b><u>1034</u></b>	<b><u>243</u></b>	1038	243	1030	244	24	945	266	955	264	<b><u>952</u></b>	<b><u>264</u></b>
456.hammer	24	697	321	<b><u>697</u></b>	<b><u>321</u></b>	697	321	12	308	363	307	364	<b><u>308</u></b>	<b><u>364</u></b>
458.sjeng	24	1288	225	1291	225	<b><u>1290</u></b>	<b><u>225</u></b>	24	<b><u>1177</u></b>	<b><u>247</u></b>	1178	247	1176	247
462.libquantum	24	746	666	746	666	<b><u>746</u></b>	<b><u>666</u></b>	24	<b><u>747</u></b>	<b><u>666</u></b>	745	668	<b><u>747</u></b>	665
464.h264ref	24	1692	314	<b><u>1720</u></b>	<b><u>309</u></b>	1744	304	24	1670	318	<b><u>1685</u></b>	<b><u>315</u></b>	1711	310
471.omnetpp	24	<b><u>787</u></b>	<b><u>191</u></b>	788	190	786	191	24	<b><u>767</u></b>	<b><u>196</u></b>	767	196	766	196
473.astar	24	<b><u>1127</u></b>	<b><u>149</u></b>	1129	149	1126	150	24	1029	164	1033	163	<b><u>1032</u></b>	<b><u>163</u></b>
483.xalancbmk	24	617	268	619	267	<b><u>618</u></b>	<b><u>268</u></b>	24	617	268	619	267	<b><u>618</u></b>	<b><u>268</u></b>

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

## General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run  
Binaries were compiled on SLES 10 with Binutils 2.18.50.50.0.7.20080502

## Base Compiler Invocation

C benchmarks:

icc -m32

C++ benchmarks:

icpc -m32

## 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 -opt-prefetch
```

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/cmpllr/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.hmmr: icc -m64
```

```
458.sjeng: icc -m64
```

```
462.libquantum: 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.hmmr: -DSPEC_CPU_LP64
```

```
458.sjeng: -DSPEC_CPU_LP64
```

```
462.libquantum: -DSPEC_CPU_LP64 -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

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.hmmr: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll12  
-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) -unroll14 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-prefetch

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) -unroll12 -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

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-ic11.1-linux64-revE.20100603.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.20100603.xml>

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

Tested with SPEC CPU2006 v1.1.

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