



# SPEC® CINT2006 Result

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## Intel Corporation

### SPECint®\_rate2006 = 221

### Intel Server System S7000FC4UR (Intel Xeon E7440)

### SPECint\_rate\_base2006 = 204

CPU2006 license: 13

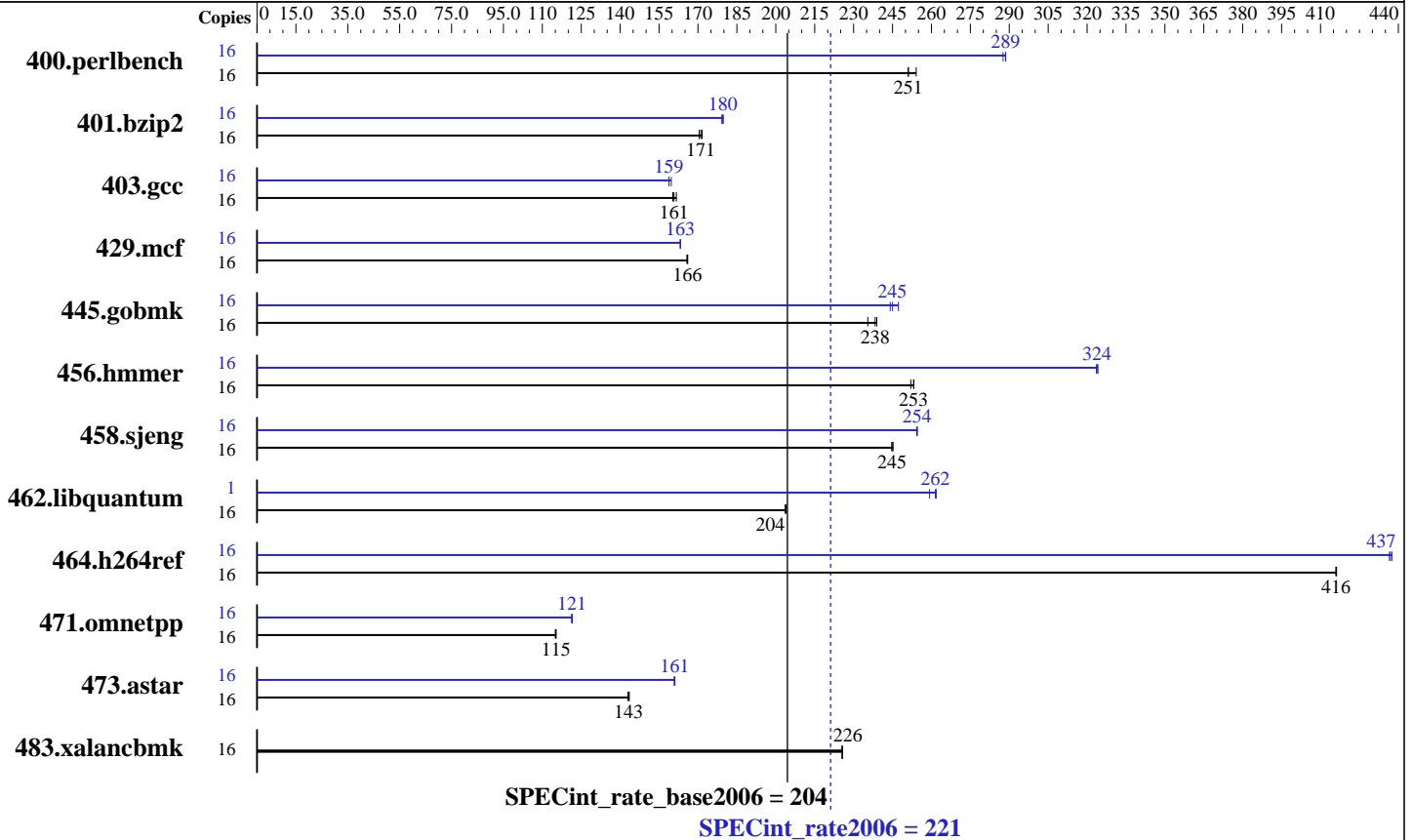
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Sep-2008

Hardware Availability: Sep-2008

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E7440  
 CPU Characteristics:  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
 CPU(s) orderable: 1, 2, 4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores  
 L3 Cache: 16 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (16x2GB Micron DDR2 5300F, CL5-5-5, 2 rank, ECC)  
 Disk Subsystem: 73 GB Seagate SAS, 10K RPM  
 Other Hardware: None

### Software

Operating System: SuSe Linux SLES10 SP2  
 Compiler: Intel C++ Compiler 11.0 for Linux  
 Build 20080730 Package ID: l\_cproc\_b\_11.0.042  
 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	16	<u>622</u>	<u>251</u>	623	251	615	254	16	543	288	542	289	<u>542</u>	<u>289</u>
401.bzip2	16	<u>902</u>	<u>171</u>	906	170	900	172	16	862	179	<u>860</u>	<u>180</u>	859	180
403.gcc	16	797	162	<u>801</u>	<u>161</u>	803	160	16	811	159	807	160	<u>811</u>	<u>159</u>
429.mcf	16	879	166	880	166	<u>880</u>	<u>166</u>	16	894	163	894	163	<u>894</u>	<u>163</u>
445.gobmk	16	713	235	<u>704</u>	<u>238</u>	702	239	16	688	244	679	247	<u>685</u>	<u>245</u>
456.hmmmer	16	592	252	590	253	<u>590</u>	<u>253</u>	16	460	324	<u>461</u>	<u>324</u>	461	324
458.sjeng	16	791	245	<u>791</u>	<u>245</u>	789	245	16	761	254	<u>761</u>	<u>254</u>	761	255
462.libquantum	16	<u>1627</u>	<u>204</u>	1625	204	1628	204	1	<u>79.2</u>	<u>262</u>	79.9	259	79.1	262
464.h264ref	16	851	416	851	416	<u>851</u>	<u>416</u>	16	809	438	<u>810</u>	<u>437</u>	811	437
471.omnetpp	16	<u>868</u>	<u>115</u>	867	115	870	115	16	823	122	<u>823</u>	<u>121</u>	825	121
473.astar	16	785	143	<u>784</u>	<u>143</u>	783	144	16	697	161	<u>698</u>	<u>161</u>	698	161
483.xalancbmk	16	<u>489</u>	<u>226</u>	489	226	489	226	16	<u>489</u>	<u>226</u>	489	226	489	226

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.

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode  
 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  
 Hardware Prefetcher: Disabled  
 Adjacent Cache Line Prefetcher: Disabled  
 High Bandwidth Option: Disabled

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc



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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:

-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -opt-prefetch

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/11.0/042/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc  
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib  
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

C++ benchmarks:

icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

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 -opt-prefetch -ansi-alias

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

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -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

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

462.libquantum: -xSSE4.1 -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) -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



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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.20090713.06.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.20090713.06.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 21:03:02 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 1 October 2008.