



# SPEC® CINT2006 Result

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## Supermicro

Motherboard X8DTT-IBQF (Intel Xeon E5620, 2.67 GHz)

**SPECint®2006 = 31.8**

**SPECint\_base2006 = 29.6**

CPU2006 license: 001176

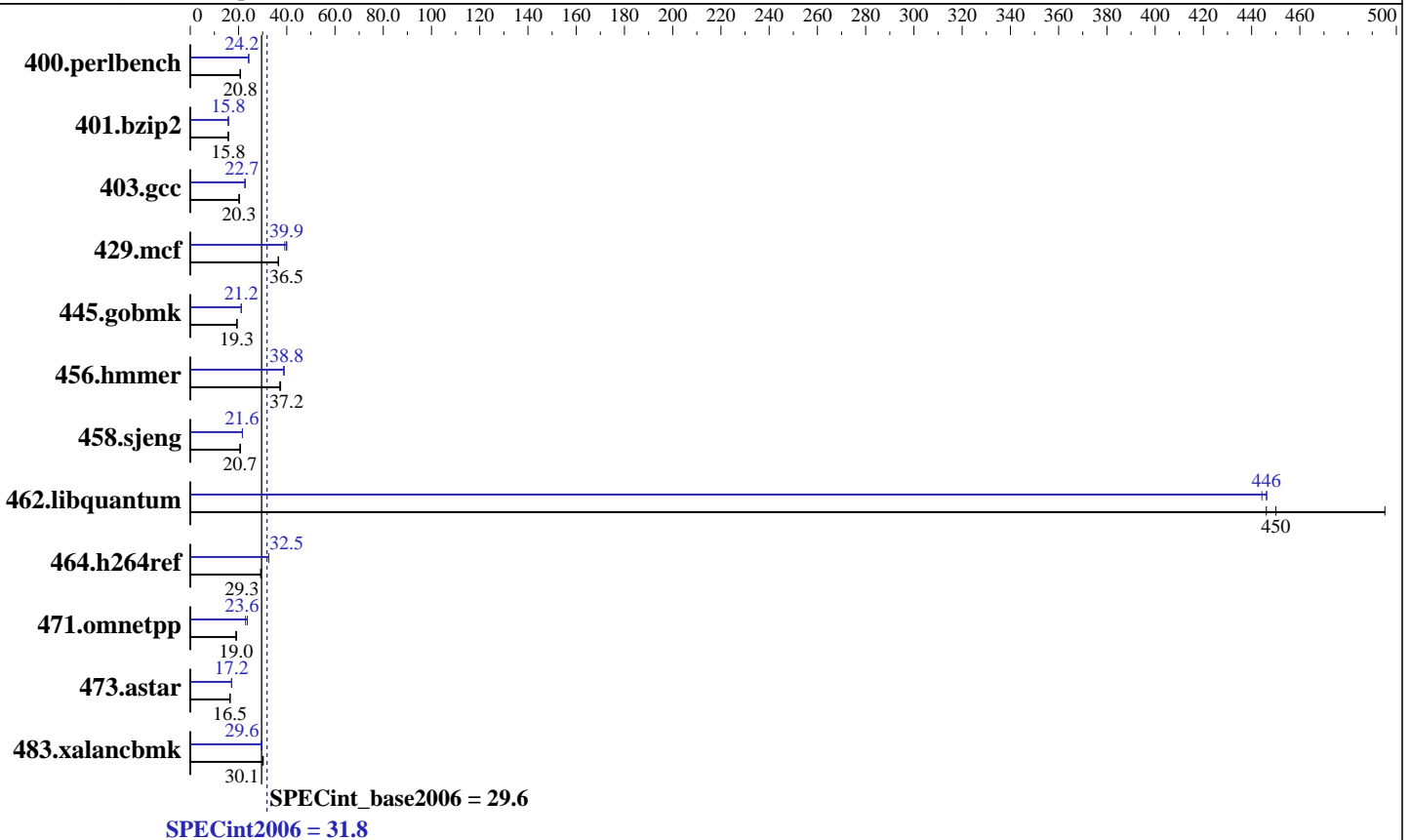
Test sponsor: Supermicro

Tested by: Supermicro

Test date: May-2010

Hardware Availability: Mar-2010

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5620  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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 DDR3-1066 RDIMM, ECC, CL7)  
 Disk Subsystem: 1 x 500 GB SATA II, 7200 RPM  
 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: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1



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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>471</u></b>	<b><u>20.8</u></b>	469	20.8	472	20.7	404	24.2	404	24.2	<b><u>404</u></b>	<b><u>24.2</u></b>
401.bzip2	613	15.7	<b><u>612</u></b>	<b><u>15.8</u></b>	612	15.8	611	15.8	<b><u>611</u></b>	<b><u>15.8</u></b>	612	15.8
403.gcc	397	20.3	<b><u>397</u></b>	<b><u>20.3</u></b>	398	20.2	355	22.7	354	22.7	<b><u>354</u></b>	<b><u>22.7</u></b>
429.mcf	<b><u>250</u></b>	<b><u>36.5</u></b>	250	36.5	249	36.6	<b><u>229</u></b>	<b><u>39.9</u></b>	228	40.0	233	39.2
445.gobmk	<b><u>543</u></b>	<b><u>19.3</u></b>	543	19.3	541	19.4	496	21.2	496	21.2	<b><u>496</u></b>	<b><u>21.2</u></b>
456.hammer	<b><u>251</u></b>	<b><u>37.2</u></b>	249	37.5	251	37.2	<b><u>240</u></b>	<b><u>38.8</u></b>	240	38.8	240	38.8
458.sjeng	586	20.6	<b><u>586</u></b>	<b><u>20.7</u></b>	584	20.7	560	21.6	559	21.6	<b><u>560</u></b>	<b><u>21.6</u></b>
462.libquantum	46.4	446	<b><u>46.0</u></b>	<b><u>450</u></b>	41.8	495	46.4	446	46.6	444	<b><u>46.4</u></b>	<b><u>446</u></b>
464.h264ref	757	29.2	756	29.3	<b><u>757</u></b>	<b><u>29.3</u></b>	679	32.6	680	32.5	<b><u>680</u></b>	<b><u>32.5</u></b>
471.omnetpp	326	19.2	330	19.0	<b><u>329</u></b>	<b><u>19.0</u></b>	273	22.9	<b><u>264</u></b>	<b><u>23.6</u></b>	264	23.7
473.astar	426	16.5	<b><u>426</u></b>	<b><u>16.5</u></b>	426	16.5	<b><u>409</u></b>	<b><u>17.2</u></b>	409	17.2	411	17.1
483.xalancbmk	228	30.3	230	30.0	<b><u>229</u></b>	<b><u>30.1</u></b>	<b><u>233</u></b>	<b><u>29.6</u></b>	233	29.6	233	29.6

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

## Operating System 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

## Platform Notes

Fan speed set to Full Speed in BIOS Setup.  
As tested, the system used a Supermicro CSE-827H-R1400B chassis.  
The chassis is bundled with a PWS-1K41P-1R power supply, 2 SNK-P0037P heatsinks,  
and 4 FAN-00111L4 cooling fans.

## General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

## Base Compiler Invocation

C benchmarks:  
icc -m64  
  
C++ benchmarks:  
icpc -m64



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
471.omnetpp: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -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/libic11.1-64bit -lsmartheap64

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):  
icpc -m32

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## Peak Compiler Invocation (Continued)

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -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

## 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 -static(pass 2) -prof-use(pass 2)  
-auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

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 -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

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel  
-opt-prefetch -par-schedule-static=32768 -ansi-alias

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

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## Peak Optimization Flags (Continued)

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: -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

## 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.20100804.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.20100804.xml>

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