



# SPEC® CINT2006 Result

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## ASUSTeK Computer Inc.

ASUS Z8PE-D12X server motherboard (Intel Xeon X5570)

**SPECint®2006 = 36.0**

**SPECint\_base2006 = 32.0**

CPU2006 license: 9016

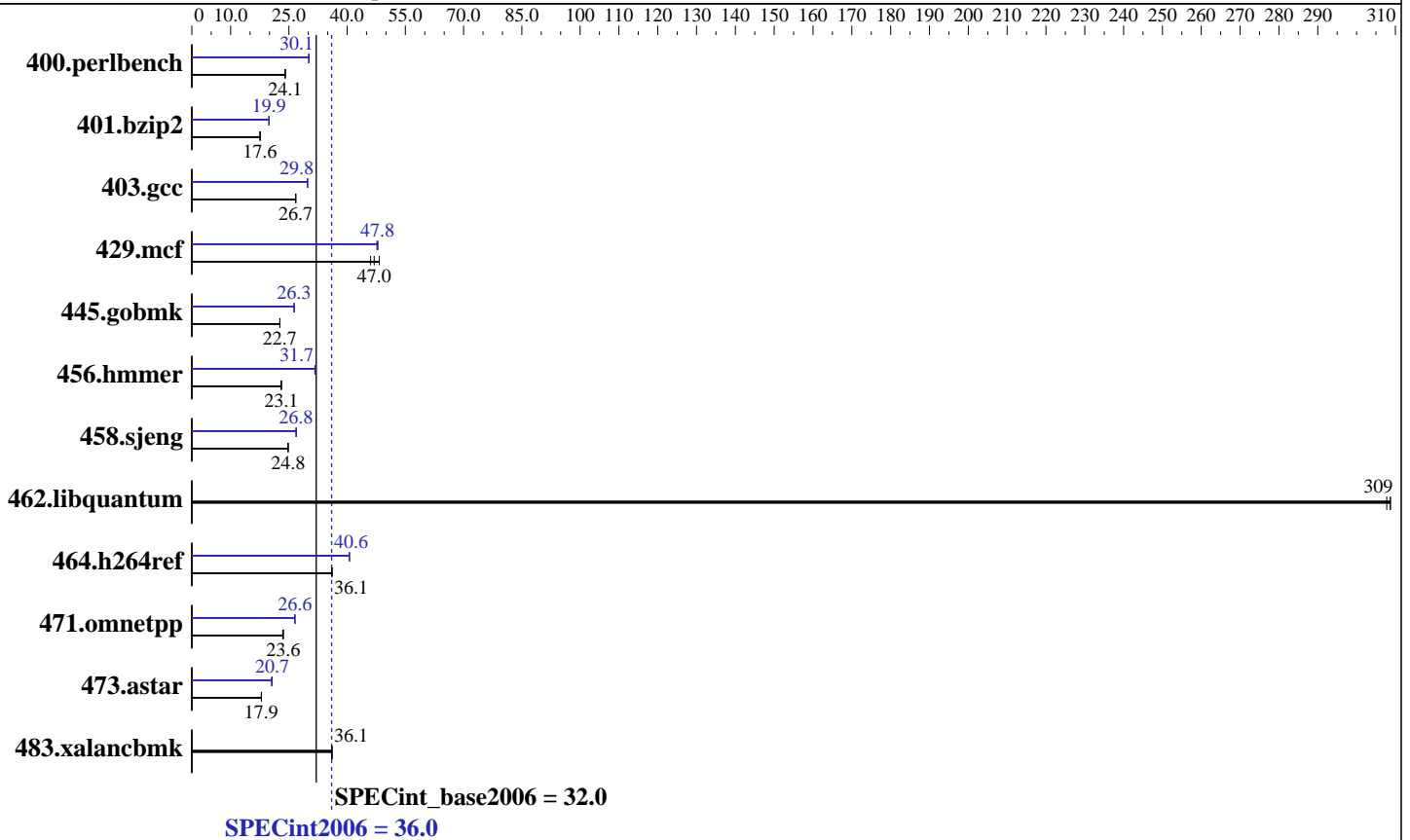
Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon X5570  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz  
 CPU MHz: 2933  
 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6 X 4 GB PC3-10600R, CL=9)  
 Disk Subsystem: Seagate ST3500830AS 500GB SATAII, 7200RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 SP2  
 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>406</b>  | <b>24.1</b> | 406        | 24.0        | 406        | 24.1        | 324         | 30.2        | 325        | 30.1        | <b>324</b> | <b>30.1</b> |
| 401.bzip2      | 550         | 17.5        | 549        | 17.6        | <b>549</b> | <b>17.6</b> | <b>486</b>  | <b>19.9</b> | 486        | 19.9        | 485        | 19.9        |
| 403.gcc        | 300         | 26.8        | 301        | 26.7        | <b>301</b> | <b>26.7</b> | <b>270</b>  | <b>29.8</b> | 271        | 29.7        | 270        | 29.9        |
| 429.mcf        | 198         | 46.0        | 189        | 48.3        | <b>194</b> | <b>47.0</b> | 190         | 48.0        | <b>191</b> | <b>47.8</b> | 191        | 47.7        |
| 445.gobmk      | <b>462</b>  | <b>22.7</b> | 462        | 22.7        | 462        | 22.7        | 399         | 26.3        | 398        | 26.4        | <b>398</b> | <b>26.3</b> |
| 456.hammer     | 405         | 23.0        | <b>405</b> | <b>23.1</b> | 405        | 23.1        | 294         | 31.7        | 293        | 31.9        | <b>294</b> | <b>31.7</b> |
| 458.sjeng      | 488         | 24.8        | <b>488</b> | <b>24.8</b> | 488        | 24.8        | 449         | 27.0        | 451        | 26.8        | <b>451</b> | <b>26.8</b> |
| 462.libquantum | <b>67.1</b> | <b>309</b>  | 67.1       | 309         | 67.3       | 308         | <b>67.1</b> | <b>309</b>  | 67.1       | 309         | 67.3       | 308         |
| 464.h264ref    | 612         | 36.1        | <b>613</b> | <b>36.1</b> | 614        | 36.0        | <b>545</b>  | <b>40.6</b> | 545        | 40.6        | 546        | 40.6        |
| 471.omnetpp    | 265         | 23.6        | 267        | 23.4        | <b>265</b> | <b>23.6</b> | 235         | 26.6        | 236        | 26.5        | <b>235</b> | <b>26.6</b> |
| 473.astar      | 391         | 17.9        | 392        | 17.9        | <b>392</b> | <b>17.9</b> | 342         | 20.5        | 339        | 20.7        | <b>339</b> | <b>20.7</b> |
| 483.xalancbmk  | <b>191</b>  | <b>36.1</b> | 191        | 36.1        | 192        | 36.0        | <b>191</b>  | <b>36.1</b> | 191        | 36.1        | 192        | 36.0        |

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 stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter

## Platform Notes

BIOS setting:  
Hardware Prefetcher: Enabled  
Adjacent Cache Line Prefetch: Enabled  
Tested system case compliance with Intel EEB 3.61 spec  
SSI Server Power Supply 650W or higher  
System was configured with ASPEED AST2050 VGA (on board VGA)

## 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:

-xSSE4.2 -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

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## Peak Portability Flags (Continued)

458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -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.bzp2: -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-calloc  
-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 -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 -auto-ilp32  
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

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## Peak Optimization Flags (Continued)

483.xalancbmk: basepeak = yes

## Peak Other Flags

Same as Base Other Flags

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.20090710.02.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.20090710.02.xml>

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

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