# SPEC® CINT2006 Result

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## ASUSTeK Computer Inc.

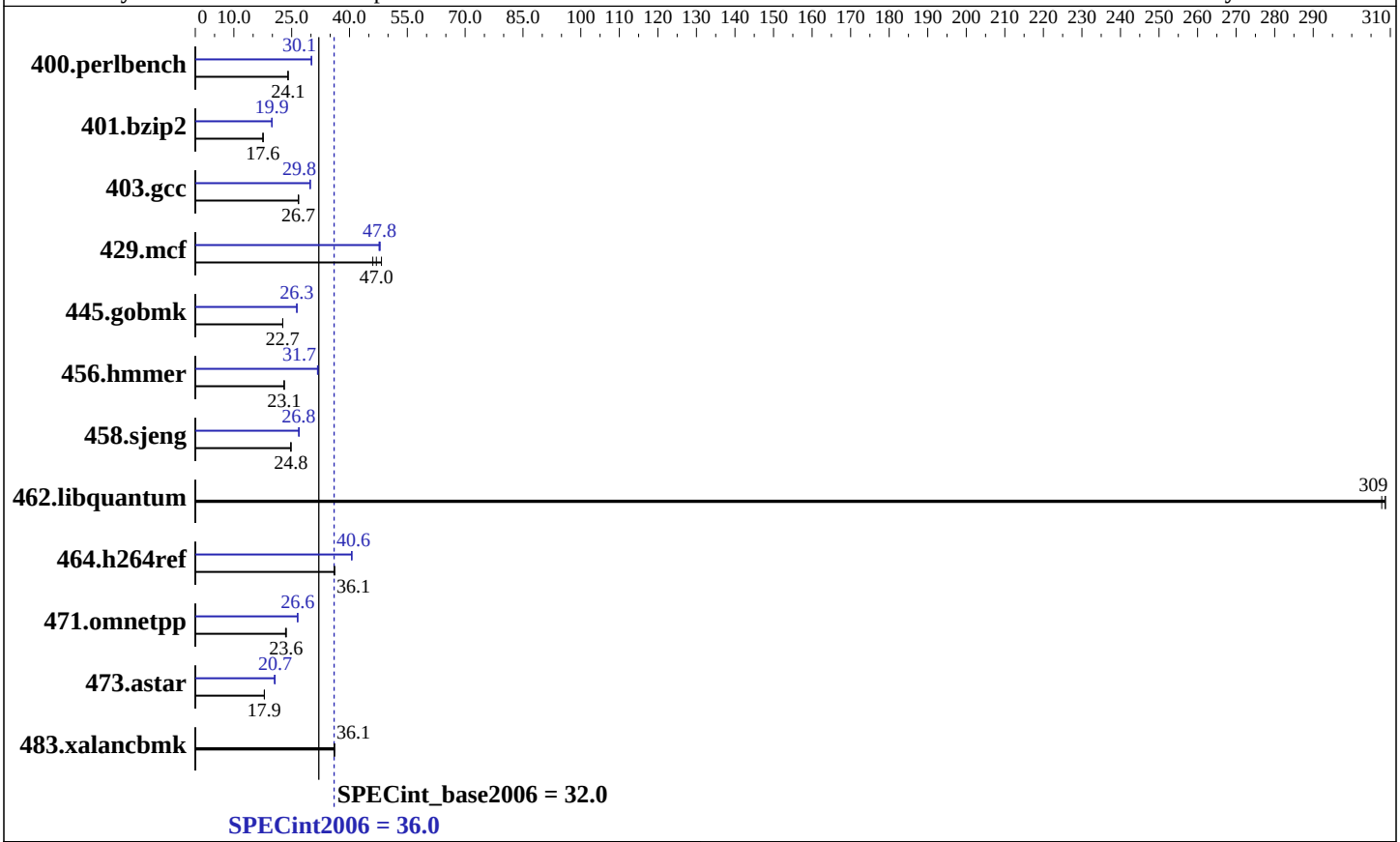
ASUS Z8PE-D12X server motherboard (Intel Xeon X5570)

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<br>Kernel 2.6.16.60-0.34-smp |
| Compiler: | Intel C++ Compiler Professional 11.0 for Linux<br>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<br>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 | **406** | **24.1** | 406 | 24.0 | 406 | 24.1 | 324 | 30.2 | 325 | 30.1 | **324** | **30.1** |
| 401.bzip2 | 550 | 17.5 | 549 | 17.6 | **549** | **17.6** | **486** | **19.9** | 486 | 19.9 | 485 | 19.9 |
| 403.gcc | 300 | 26.8 | 301 | 26.7 | **301** | **26.7** | **270** | **29.8** | 271 | 29.7 | 270 | 29.9 |
| 429.mcf | 198 | 46.0 | 189 | 48.3 | **194** | **47.0** | 190 | 48.0 | **191** | **47.8** | 191 | 47.7 |
| 445.gobmk | **462** | **22.7** | 462 | 22.7 | 462 | 22.7 | 399 | 26.3 | 398 | 26.4 | **398** | **26.3** |
| 456.hmmer | 405 | 23.0 | **405** | **23.1** | 405 | 23.1 | 294 | 31.7 | 293 | 31.9 | **294** | **31.7** |
| 458.sjeng | 488 | 24.8 | **488** | **24.8** | 488 | 24.8 | 449 | 27.0 | 451 | 26.8 | **451** | **26.8** |
| 462.libquantum | **67.1** | **309** | 67.1 | 309 | 67.3 | 308 | **67.1** | **309** | 67.1 | 309 | 67.3 | 308 |
| 464.h264ref | 612 | 36.1 | **613** | **36.1** | 614 | 36.0 | **545** | **40.6** | 545 | 40.6 | 546 | 40.6 |
| 471.omnetpp | 265 | 23.6 | 267 | 23.4 | **265** | **23.6** | 235 | 26.6 | 236 | 26.5 | **235** | **26.6** |
| 473.astar | 391 | 17.9 | 392 | 17.9 | **392** | **17.9** | 342 | 20.5 | 339 | 20.7 | **339** | **20.7** |
| 483.xalancbmk | **191** | **36.1** | 191 | 36.1 | 192 | 36.0 | **191** | **36.1** | 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
```

## 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

Continued on next page

## 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.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) -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

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.20090710.02.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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Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 23:31:37 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 31 March 2009.