# SPEC® CINT2006 Result

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## Itautec

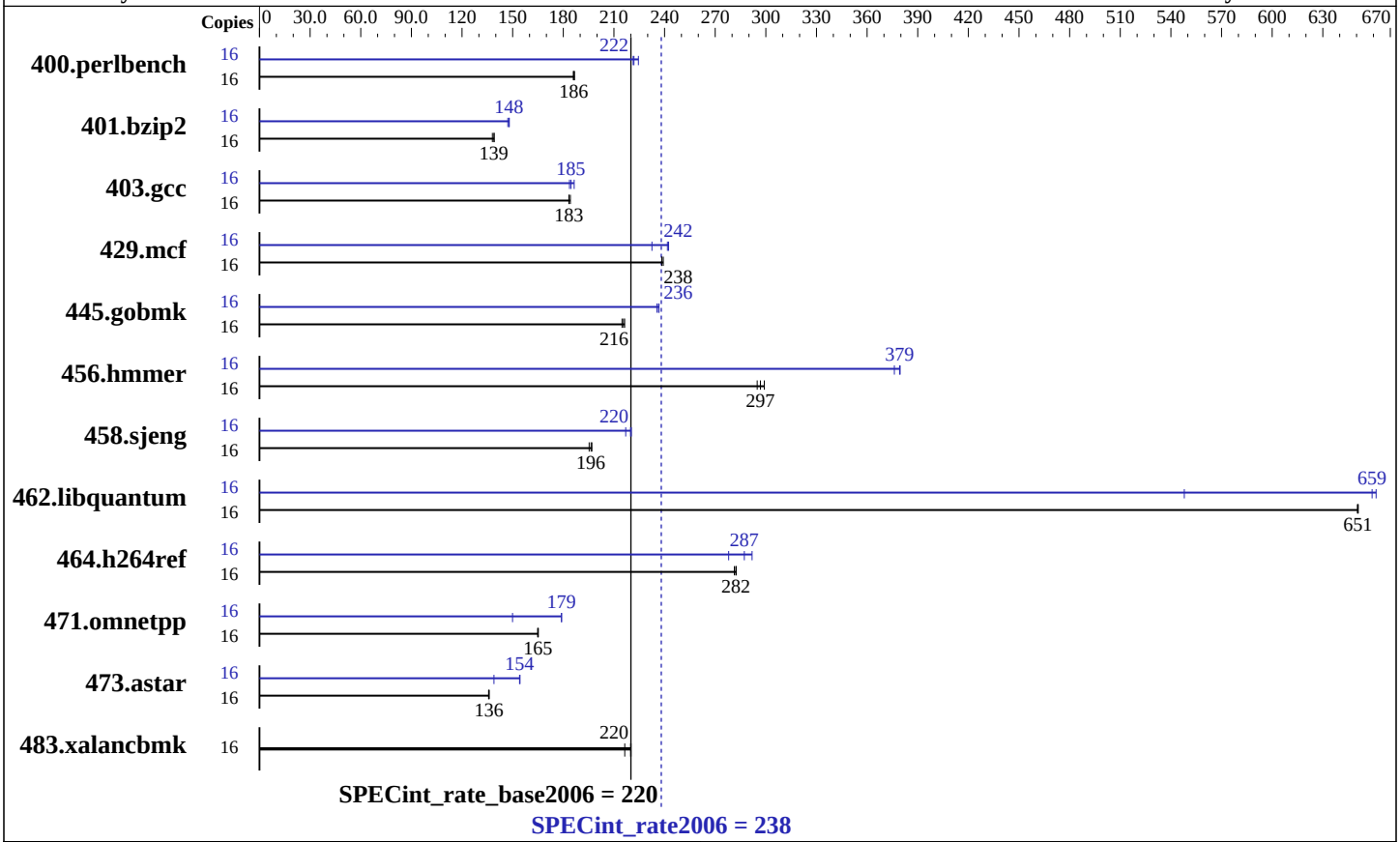
## Servidor Itautec MX203 (Intel Xeon E5640)

SPECint®_rate2006 = 238

SPECint_rate_base2006 = 220

**CPU2006 license:** 9001
**Test sponsor:** Itautec
**Tested by:** Itautec

**Test date:** Apr-2010
**Hardware Availability:** Apr-2010
**Software Availability:** Feb-2010




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5640 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.93 GHz |
| CPU MHz: | 2667 |
| 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: | 12 GB (3 x 4GB, DDR3-1066, Dual Rank, CL 7, ECC) |
| Disk Subsystem: | 1 x 160 GB SATA-2, 7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp |
| Compiler: | Intel C++ Professional Compiler 11.1 for Linux Build 20100203 Package ID: l_cproc_p_11.1.069 |
| Auto Parallel: | No |
| 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 |

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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 | 841 | 186 | **840** | **186** | 837 | 187 | 16 | 696 | 224 | 706 | 221 | **705** | **222** |
| 401.bzip2 | 16 | 1119 | 138 | **1111** | **139** | 1110 | 139 | 16 | 1049 | 147 | **1045** | **148** | 1043 | 148 |
| 403.gcc | 16 | 703 | 183 | 699 | 184 | **702** | **183** | 16 | 701 | 184 | **698** | **185** | 691 | 186 |
| 429.mcf | 16 | **612** | **238** | 612 | 238 | 610 | 239 | 16 | 628 | 233 | 602 | 242 | **604** | **242** |
| 445.gobmk | 16 | 776 | 216 | 781 | 215 | **778** | **216** | 16 | 709 | 237 | **710** | **236** | 713 | 235 |
| 456.hmmer | 16 | 499 | 299 | 506 | 295 | **503** | **297** | 16 | 393 | 380 | **394** | **379** | 397 | 376 |
| 458.sjeng | 16 | 983 | 197 | 991 | 195 | **986** | **196** | 16 | 892 | 217 | 879 | 220 | **880** | **220** |
| 462.libquantum | 16 | 510 | 650 | **509** | **651** | 509 | 651 | 16 | 605 | 548 | **503** | **659** | 501 | 662 |
| 464.h264ref | 16 | 1259 | 281 | 1254 | 282 | **1255** | **282** | 16 | 1213 | 292 | 1274 | 278 | **1233** | **287** |
| 471.omnetpp | 16 | **606** | **165** | 607 | 165 | 605 | 165 | 16 | 667 | 150 | 559 | 179 | **559** | **179** |
| 473.astar | 16 | 828 | 136 | **826** | **136** | 825 | 136 | 16 | 809 | 139 | **729** | **154** | 728 | 154 |
| 483.xalancbmk | 16 | **502** | **220** | 502 | 220 | 510 | 216 | 16 | **502** | **220** | 502 | 220 | 510 | 216 |

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
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.
```

## General Notes

```
This result was measured on the Servidor Itautec MX203.
The Servidor Itautec MX223 and the Servidor Itautec MX203 are electronically equivalent.
```

# 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`

## 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/opt/sh/SmartHeap_8.1/lib -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.hmmer: `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`

Continued on next page

## Peak Portability Flags (Continued)

456.hmmer: -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

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.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: -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) -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/opt/sh/SmartHeap_8.1/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 -Wl,-z,muldefs

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## Peak Optimization Flags (Continued)

473.astar (continued):
`-L/opt/sh/SmartHeap_8.1/lib -lsmartheap64`

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/Itautec-Intel-ic11.1-linux64-revE.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Itautec-Intel-ic11.1-linux64-revE.xml`


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