# SPEC® CINT2006 Result

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## Itautec

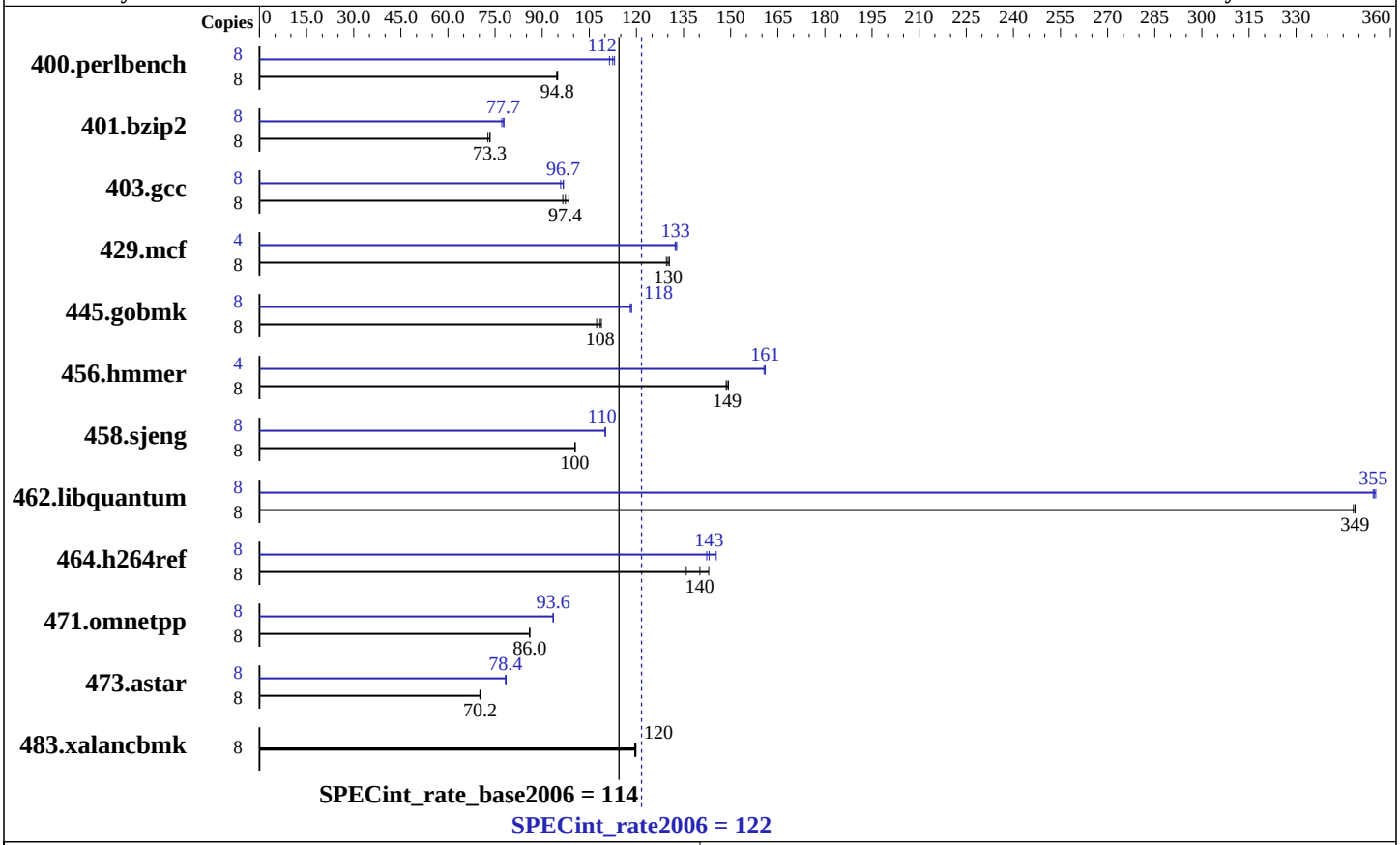
## Servidor Itautec MX203 (Intel Xeon E5640)

SPECint®_rate2006 = 122

SPECint_rate_base2006 = 114

**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: | 4 cores, 1 chip, 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 | 8 | 823 | 94.9 | **824** | **94.8** | 826 | 94.6 | 8 | **695** | **112** | 691 | 113 | 702 | 111 |
| 401.bzip2 | 8 | 1062 | 72.7 | **1053** | **73.3** | 1052 | 73.4 | 8 | 1001 | 77.1 | 992 | 77.8 | **994** | **77.7** |
| 403.gcc | 8 | 654 | 98.5 | **661** | **97.4** | 667 | 96.6 | 8 | **666** | **96.7** | 672 | 95.9 | 666 | 96.8 |
| 429.mcf | 8 | 559 | 130 | 563 | 130 | **561** | **130** | 4 | **275** | **133** | 275 | 133 | 276 | 132 |
| 445.gobmk | 8 | **774** | **108** | 771 | 109 | 782 | 107 | 8 | 711 | 118 | 709 | 118 | **709** | **118** |
| 456.hmmer | 8 | **501** | **149** | 502 | 149 | 500 | 149 | 4 | 232 | 161 | 232 | 161 | **232** | **161** |
| 458.sjeng | 8 | 963 | 101 | 964 | 100 | **964** | **100** | 8 | 879 | 110 | **879** | **110** | 880 | 110 |
| 462.libquantum | 8 | **475** | **349** | 475 | 349 | 476 | 348 | 8 | **467** | **355** | 468 | 355 | 466 | 355 |
| 464.h264ref | 8 | 1238 | 143 | 1303 | 136 | **1263** | **140** | 8 | 1217 | 145 | 1243 | 142 | **1237** | **143** |
| 471.omnetpp | 8 | 582 | 85.9 | **581** | **86.0** | 581 | 86.1 | 8 | **534** | **93.6** | 534 | 93.6 | 535 | 93.5 |
| 473.astar | 8 | 798 | 70.4 | **800** | **70.2** | 800 | 70.2 | 8 | 716 | 78.5 | 717 | 78.4 | **716** | **78.4** |
| 483.xalancbmk | 8 | **461** | **120** | 461 | 120 | 462 | 119 | 8 | **461** | **120** | 461 | 120 | 462 | 119 |

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`

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## 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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