



# SPEC® CINT2006 Result

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Itaotec

SPECint®\_rate2006 = 432

Servidor Itaotec MX224 (Intel Xeon X5690)

SPECint\_rate\_base2006 = 409

CPU2006 license: 9001

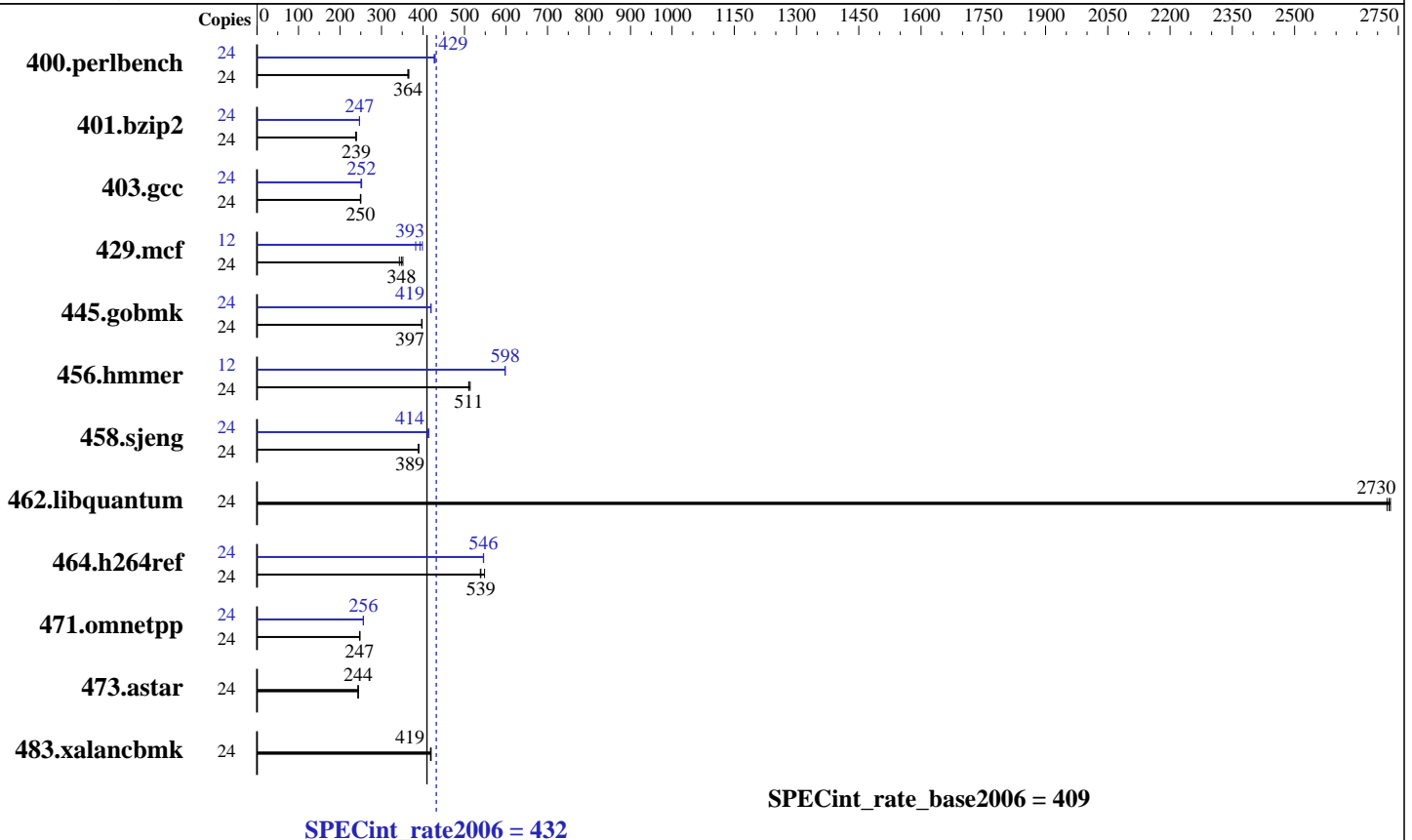
Test date: Jan-2012

Test sponsor: Itaotec

Hardware Availability: Jul-2011

Tested by: Itaotec

Software Availability: Oct-2011



## Hardware

CPU Name: Intel Xeon X5690  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz  
 CPU MHz: 3467  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 2 x 500 GB SATA, 7200 RPM, RAID 0  
 Other Hardware: None

## Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86\_64), 2.6.32.12-0.7-default  
 Compiler: C/C++: Version 12.1.0 of Intel Compiler XE Build 20111011  
 Auto Parallel: No  
 File System: ext3  
 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  | 24     | 644        | 364        | 641        | 366        | <b>644</b> | <b>364</b>  | 24     | <b>547</b> | <b>429</b> | 547        | 429        | 549        | 427         |
| 401.bzip2      | 24     | 968        | 239        | <b>969</b> | <b>239</b> | 972        | 238         | 24     | 938        | 247        | 937        | 247        | <b>938</b> | <b>247</b>  |
| 403.gcc        | 24     | <b>773</b> | <b>250</b> | 773        | 250        | 776        | 249         | 24     | <b>767</b> | <b>252</b> | 772        | 250        | 766        | 252         |
| 429.mcf        | 24     | <b>629</b> | <b>348</b> | 638        | 343        | 622        | 352         | 12     | 286        | 382        | 275        | 398        | <b>279</b> | <b>393</b>  |
| 445.gobmk      | 24     | 633        | 398        | 634        | 397        | <b>634</b> | <b>397</b>  | 24     | 600        | 420        | 601        | 419        | <b>601</b> | <b>419</b>  |
| 456.hammer     | 24     | <b>438</b> | <b>511</b> | 439        | 510        | 436        | 514         | 12     | 187        | 597        | 187        | 598        | <b>187</b> | <b>598</b>  |
| 458.sjeng      | 24     | 747        | 389        | <b>746</b> | <b>389</b> | 745        | 390         | 24     | 704        | 413        | 702        | 414        | <b>702</b> | <b>414</b>  |
| 462.libquantum | 24     | 182        | 2730       | 183        | 2720       | <b>182</b> | <b>2730</b> | 24     | 182        | 2730       | 183        | 2720       | <b>182</b> | <b>2730</b> |
| 464.h264ref    | 24     | 969        | 548        | 987        | 538        | <b>985</b> | <b>539</b>  | 24     | 974        | 545        | <b>973</b> | <b>546</b> | 973        | 546         |
| 471.omnetpp    | 24     | <b>606</b> | <b>247</b> | 605        | 248        | 606        | 247         | 24     | <b>585</b> | <b>256</b> | 585        | 256        | 586        | 256         |
| 473.astar      | 24     | 692        | 244        | <b>692</b> | <b>244</b> | 691        | 244         | 24     | 692        | 244        | <b>692</b> | <b>244</b> | 691        | 244         |
| 483.xalancbmk  | 24     | 395        | 419        | 396        | 418        | <b>395</b> | <b>419</b>  | 24     | 395        | 419        | 396        | 418        | <b>395</b> | <b>419</b>  |

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.  
Large pages were not enabled for this run

## Platform Notes

Data Reuse disabled in BIOS.  
DCU Prefetcher disabled in BIOS.

## General Notes

This result was measured on the Servidor Itaotec MX224.  
The Servidor Itaotec MX203+, Servidor Itaotec MX223+ and the Servidor Itaotec MX224 are electronically equivalent.

## Base Compiler Invocation

C benchmarks:  
icc -m32

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## Base Compiler Invocation (Continued)

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 -opt-prefetch  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/rcaneca/sh/SmartHeap\_8.1/lib -lsmartheap  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:  
icpc -m32



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## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
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) -prof-use(pass 2)  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

429.mcf: -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 -auto-ilp32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -auto-ilp32

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4 -auto-ilp32  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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) -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

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## Peak Optimization Flags (Continued)

471.omnetpp (continued):

-L/home/rcaneca/sh/SmartHeap\_8.1/lib -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

[http://www.spec.org/cpu2006/flags/Itaotec-Servidor\\_Itaotec-Intel-Linux-Platform.html](http://www.spec.org/cpu2006/flags/Itaotec-Servidor_Itaotec-Intel-Linux-Platform.html)

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

[http://www.spec.org/cpu2006/flags/Itaotec-Servidor\\_Itaotec-Intel-Linux-Platform.xml](http://www.spec.org/cpu2006/flags/Itaotec-Servidor_Itaotec-Intel-Linux-Platform.xml)

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

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