# SPEC® CINT2006 Result



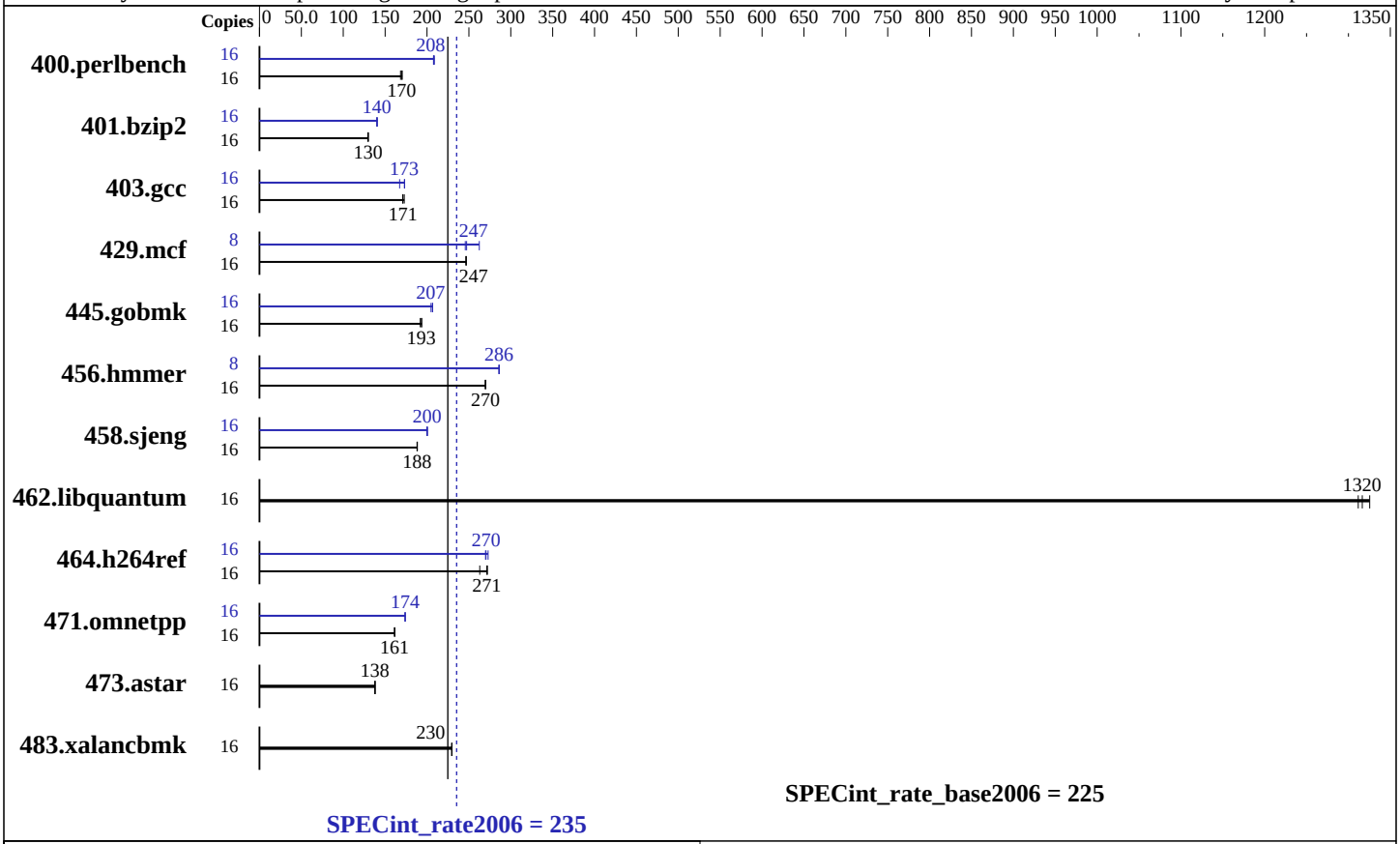
## E4 Computer Engineering S.p.A.
## E-Rack Twin E7116

**SPECint®_rate2006 = 235**

**SPECint_rate_base2006 = 225**

**CPU2006 license:** 3106
**Test sponsor:** E4 Computer Engineering S.p.A.
**Tested by:** E4 Computer Engineering S.p.A.

**Test date:** Jul-2011
**Hardware Availability:** May-2010
**Software Availability:** Apr-2011




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5620 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.67 GHz |
| CPU MHz: | 2400 |
| 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: | 24 GB (6 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz) |
| Disk Subsystem: | 1 x 250 GB SATA II Western Digital WD2502ABYS-01B7A0, 7200 rpm |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | openSUSE 11.1 (x86_64)<br>Kernel 2.6.27.s7-9-default |
| Compiler: | Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64<br>Version 12.0.4 Build 20110427 |
| 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 | 16 | 928 | 168 | 917 | 170 | **921** | **170** | 16 | 749 | 209 | **752** | **208** | 752 | 208 |
| 401.bzip2 | 16 | 1194 | 129 | **1190** | **130** | 1188 | 130 | 16 | **1102** | **140** | 1097 | 141 | 1102 | 140 |
| 403.gcc | 16 | **752** | **171** | 753 | 171 | 745 | 173 | 16 | 743 | 173 | **745** | **173** | 770 | 167 |
| 429.mcf | 16 | 592 | 247 | **591** | **247** | 591 | 247 | 8 | 278 | 262 | 297 | 246 | **295** | **247** |
| 445.gobmk | 16 | **868** | **193** | 875 | 192 | 867 | 194 | 16 | **813** | **207** | 812 | 207 | 820 | 205 |
| 456.hmmer | 16 | 553 | 270 | **553** | **270** | 553 | 270 | 8 | 261 | 286 | 261 | 286 | **261** | **286** |
| 458.sjeng | 16 | **1028** | **188** | 1029 | 188 | 1027 | 188 | 16 | **967** | **200** | 969 | 200 | 965 | 201 |
| 462.libquantum | 16 | 250 | 1330 | **252** | **1320** | 253 | 1310 | 16 | 250 | 1330 | **252** | **1320** | 253 | 1310 |
| 464.h264ref | 16 | 1301 | 272 | 1346 | 263 | **1305** | **271** | 16 | 1297 | 273 | 1312 | 270 | **1309** | **270** |
| 471.omnetpp | 16 | 620 | 161 | 619 | 162 | **620** | **161** | 16 | 575 | 174 | **575** | **174** | 575 | 174 |
| 473.astar | 16 | 813 | 138 | **814** | **138** | 815 | 138 | 16 | 813 | 138 | **814** | **138** | 815 | 138 |
| 483.xalancbmk | 16 | **481** | **230** | 480 | 230 | 481 | 230 | 16 | **481** | **230** | 480 | 230 | 481 | 230 |

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

```
Large pages were not enabled for this run
```

## Platform Notes

```
Turbo Mode enabled in BIOS
Turbo Boost set to Traditional in BIOS
Power C-states enabled in BIOS
Demand Scrub disabled in BIOS
Hyper-Threading Technology enabled in BIOS
```

## General Notes

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

## 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/opt/tools/smartHEAP/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

## 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

Continued on next page

## Peak Optimization Flags (Continued)

471.omnetpp (continued):
`-L/opt/tools/smartHEAP/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-ic12.0-linux64-revB.html`
`http://www.spec.org/cpu2006/flags/E4ComputerEngineering-platform.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml`
`http://www.spec.org/cpu2006/flags/E4ComputerEngineering-platform.xml`



For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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