# SPEC® CINT2006 Result

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## NEC Corporation

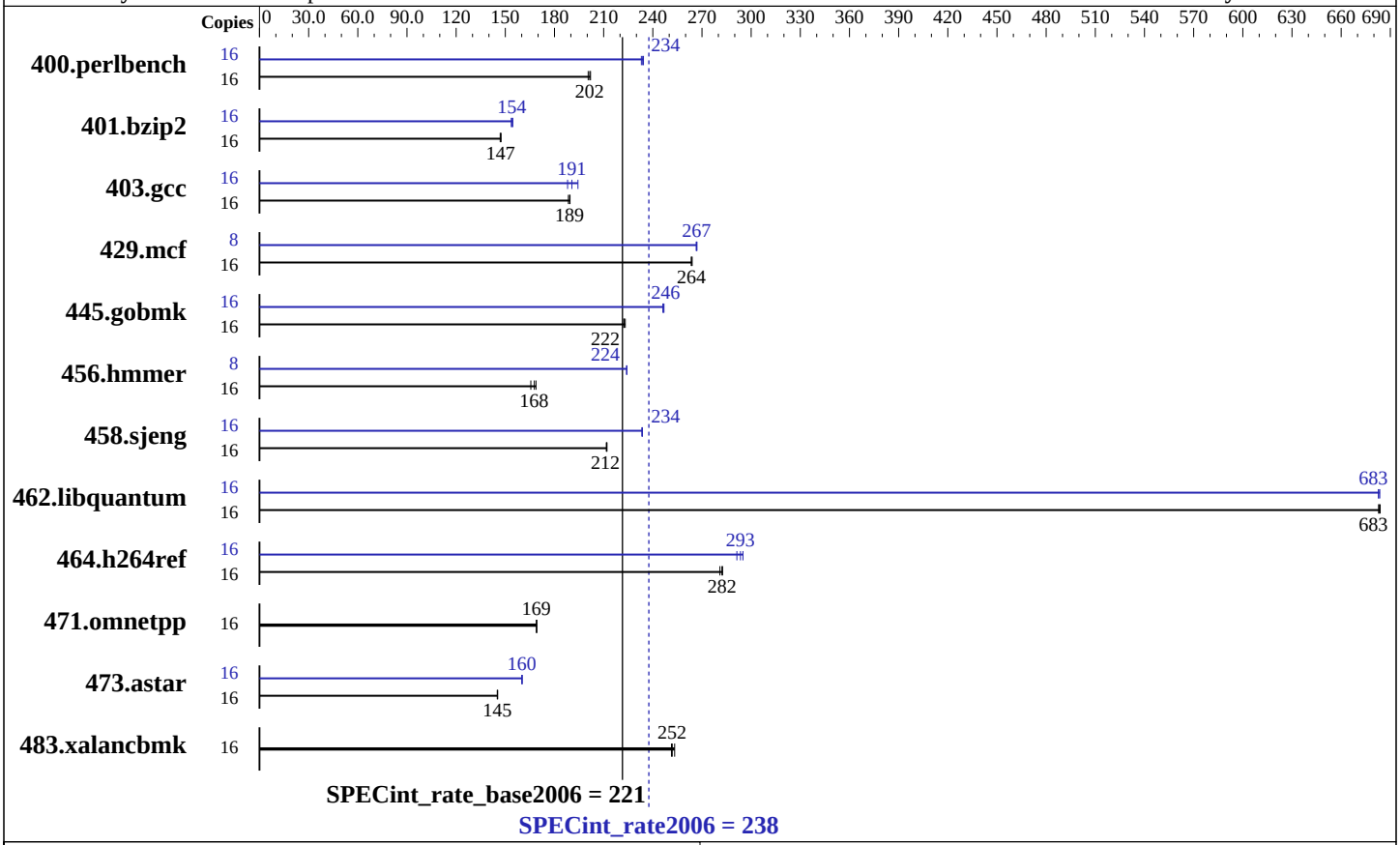
Express5800/B120a-d
(Intel Xeon X5550)

SPECint®_rate2006 = 238

SPECint_rate_base2006 = 221

**CPU2006 license:** 9006
**Test sponsor:** NEC Corporation
**Tested by:** NEC Corporation

**Test date:** Aug-2009
**Hardware Availability:** Jun-2009
**Software Availability:** Feb-2009




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5550 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.06 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: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 48 GB (12 X 4 GB PC3-8500R, 2 rank, CL7, ECC) |
| Disk Subsystem: | 1x73.2 GB SAS, 10000 RPM in Express5800/AD106a |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp |
| Compiler: | Intel C++ Compiler Professional 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081 |
| 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 Library 8.1 Binutils 2.18.50.0.7.20080502 |

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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 | 779 | 201 | 774 | 202 | **776** | **202** | 16 | 671 | 233 | 667 | 234 | **669** | **234** |
| 401.bzip2 | 16 | 1048 | 147 | 1051 | 147 | **1049** | **147** | 16 | **1002** | **154** | 999 | 155 | 1005 | 154 |
| 403.gcc | 16 | **681** | **189** | 680 | 189 | 683 | 188 | 16 | 663 | 194 | 685 | 188 | **676** | **191** |
| 429.mcf | 16 | 554 | 264 | 553 | 264 | **554** | **264** | 8 | **274** | **267** | 273 | 267 | 274 | 266 |
| 445.gobmk | 16 | 752 | 223 | **755** | **222** | 755 | 222 | 16 | 680 | 247 | **681** | **246** | 682 | 246 |
| 456.hmmer | 16 | 885 | 169 | **890** | **168** | 902 | 166 | 8 | 333 | 224 | 333 | 224 | **333** | **224** |
| 458.sjeng | 16 | 915 | 212 | **914** | **212** | 913 | 212 | 16 | **829** | **234** | 830 | 233 | 829 | 234 |
| 462.libquantum | 16 | 486 | 683 | **485** | **683** | 485 | 684 | 16 | **485** | **683** | 486 | 683 | 485 | 684 |
| 464.h264ref | 16 | 1260 | 281 | **1255** | **282** | 1253 | 283 | 16 | 1200 | 295 | 1216 | 291 | **1206** | **293** |
| 471.omnetpp | 16 | **592** | **169** | 591 | 169 | 592 | 169 | 16 | **592** | **169** | 591 | 169 | 592 | 169 |
| 473.astar | 16 | **773** | **145** | 774 | 145 | 773 | 145 | 16 | **701** | **160** | 702 | 160 | 701 | 160 |
| 483.xalancbmk | 16 | 436 | 253 | 439 | 251 | **438** | **252** | 16 | 436 | 253 | 439 | 251 | **438** | **252** |

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
```

## Platform Notes

```
BIOS setting:
NUMA configuration: Enabled
```

# 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 -inline-calloc -opt-malloc-options=3 -opt-prefetch`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs -L/opt/SmartHeap_8.1/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/11.0/081/bin/intel64/icc`

456.hmmer: `/opt/intel/Compiler/11.0/081/bin/intel64/icc`

458.sjeng: `/opt/intel/Compiler/11.0/081/bin/intel64/icc`

C++ benchmarks (except as noted below):
`icpc`

473.astar: `/opt/intel/Compiler/11.0/081/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) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -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

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 -opt-malloc-options=3 -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: basepeak = yes

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/opt/SmartHeap_8.1/lib64 -lsmartheap64

Continued on next page

## Peak Optimization Flags (Continued)

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-ic11.0-int-linux64-revG.html`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revG.xml`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.xml`


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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 02:43:38 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 September 2009.