# SPEC® CINT2006 Result

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## NEC Corporation

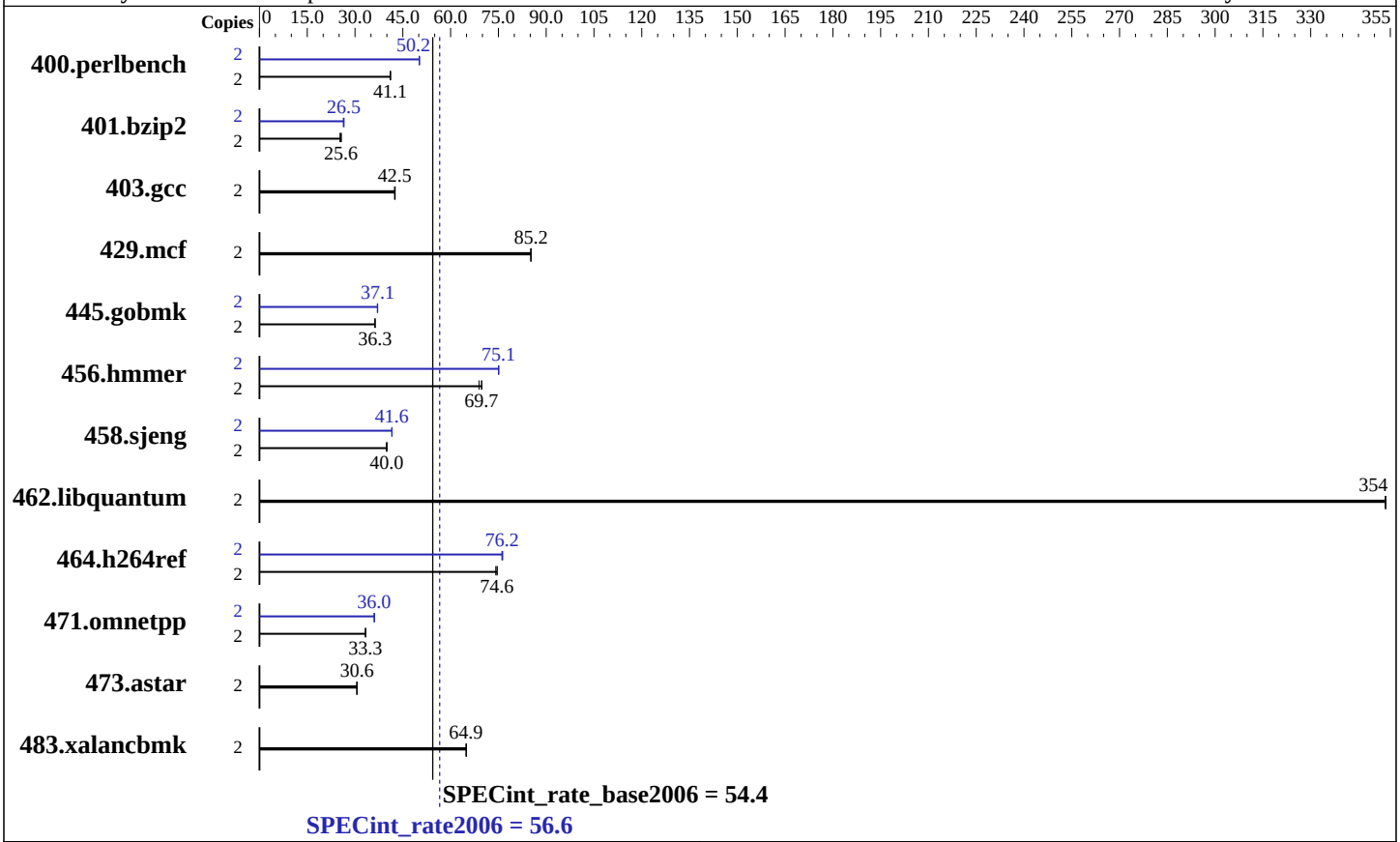
## Express5800/GT110e (Intel Celeron G540)

SPECint®_rate2006 = 56.6

SPECint_rate_base2006 = 54.4

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

**Test date:** Jul-2012
**Hardware Availability:** Jul-2012
**Software Availability:** Feb-2012




### Hardware

| | |
|---|---|
| CPU Name: | Intel Celeron G540 |
| CPU Characteristics: | |
| CPU MHz: | 2500 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 2 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC, running at 1066 MHz and CL7) |
| Disk Subsystem: | 1 x 500 GB SATA, 7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.2 (Santiago)<br>Kernel 2.6.32-220.el6.x86_64 |
| Compiler: | C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux; |
| Auto Parallel: | No |
| File System: | ext4 |
| 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 | 2 | **476** | **41.1** | 476 | 41.1 | 475 | 41.1 | 2 | 390 | 50.1 | 389 | 50.2 | **389** | **50.2** |
| 401.bzip2 | 2 | 752 | 25.7 | **753** | **25.6** | 764 | 25.3 | 2 | **729** | **26.5** | 728 | 26.5 | 733 | 26.3 |
| 403.gcc | 2 | **379** | **42.5** | 378 | 42.6 | 379 | 42.4 | 2 | **379** | **42.5** | 378 | 42.6 | 379 | 42.4 |
| 429.mcf | 2 | 214 | 85.3 | **214** | **85.2** | 214 | 85.2 | 2 | 214 | 85.3 | **214** | **85.2** | 214 | 85.2 |
| 445.gobmk | 2 | 579 | 36.2 | 578 | 36.3 | **579** | **36.3** | 2 | **566** | **37.1** | 567 | 37.0 | 566 | 37.1 |
| 456.hmmer | 2 | **268** | **69.7** | 271 | 68.9 | 267 | 69.8 | 2 | **249** | **75.1** | 249 | 75.0 | 248 | 75.1 |
| 458.sjeng | 2 | 608 | 39.8 | 605 | 40.0 | **605** | **40.0** | 2 | 582 | 41.6 | **582** | **41.6** | 582 | 41.6 |
| 462.libquantum | 2 | 117 | 353 | 117 | 354 | **117** | **354** | 2 | 117 | 353 | 117 | 354 | **117** | **354** |
| 464.h264ref | 2 | 597 | 74.2 | **594** | **74.6** | 593 | 74.6 | 2 | **581** | **76.2** | 580 | 76.4 | 581 | 76.1 |
| 471.omnetpp | 2 | **376** | **33.3** | 375 | 33.3 | 376 | 33.2 | 2 | 346 | 36.1 | **347** | **36.0** | 347 | 36.0 |
| 473.astar | 2 | **459** | **30.6** | 459 | 30.6 | 459 | 30.6 | 2 | **459** | **30.6** | 459 | 30.6 | 459 | 30.6 |
| 483.xalancbmk | 2 | 213 | 64.9 | **213** | **64.9** | 212 | 65.0 | 2 | 213 | 64.9 | **213** | **64.9** | 212 | 65.0 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

## Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

## Platform Notes

```
Default BIOS settings were used.
```

## General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

 Added glibc-static-2.12-1.47.el6.x86_64.rpm
 to enable static linking

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

## 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 -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-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  -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) -auto-ilp32

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

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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

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 -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: basepeak = yes

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-ic12.1-official-linux64.20120425.html`
`http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml`
`http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml`


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