# SPEC® CINT2006 Result

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## NEC Corporation

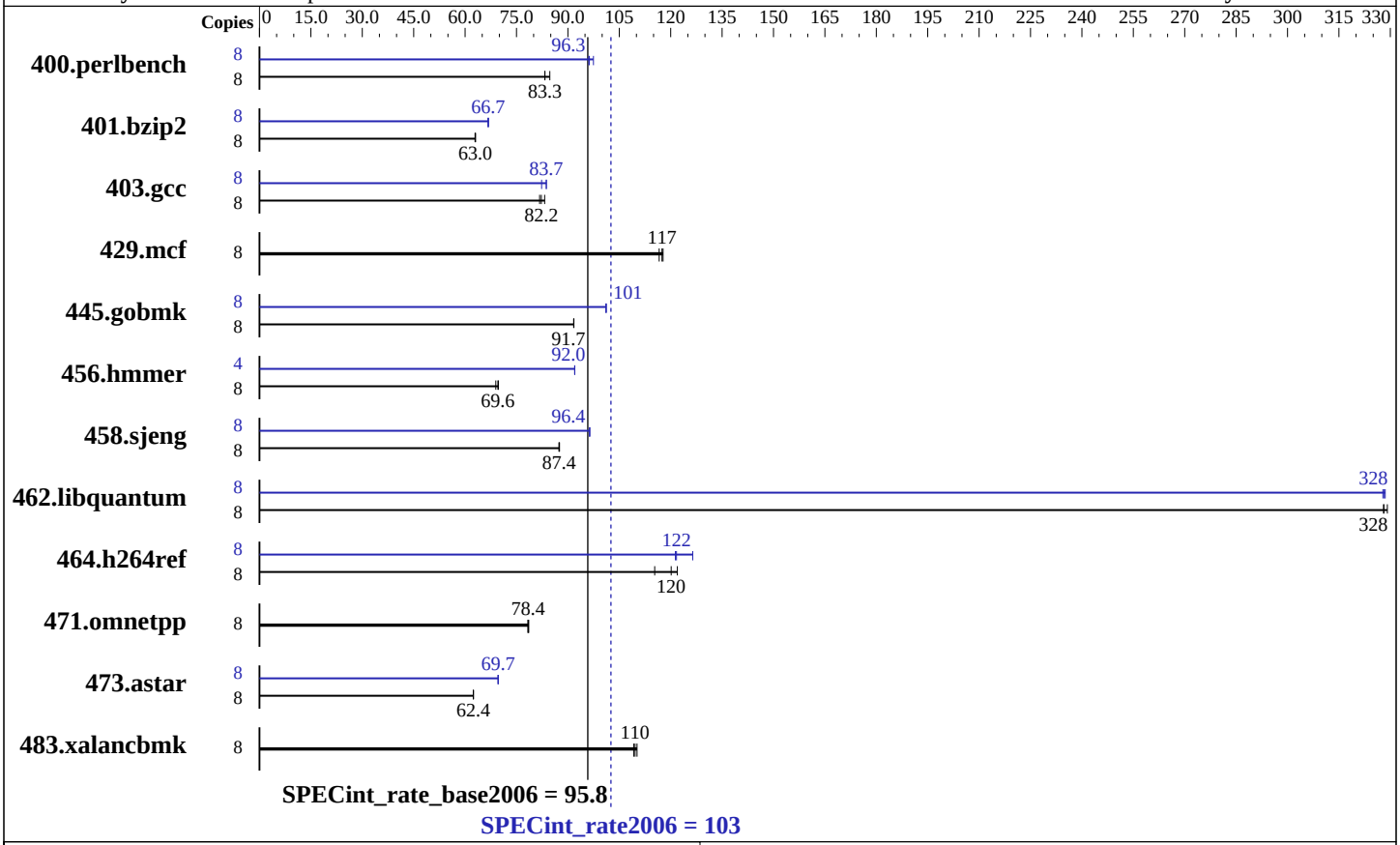
Express5800/B120a-d
(Intel Xeon L5520)

SPECint®_rate2006 = 103

SPECint_rate_base2006 = 95.8

**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 L5520 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.53 GHz |
| CPU MHz: | 2267 |
| 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: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 24 GB (6 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 | 8 | 923 | 84.7 | **938** | **83.3** | 939 | 83.3 | 8 | 802 | 97.5 | **812** | **96.3** | 813 | 96.1 |
| 401.bzip2 | 8 | **1226** | **63.0** | 1227 | 62.9 | 1224 | 63.1 | 8 | 1157 | 66.7 | **1157** | **66.7** | 1155 | 66.8 |
| 403.gcc | 8 | **783** | **82.2** | 788 | 81.7 | 774 | 83.2 | 8 | 782 | 82.3 | **770** | **83.7** | 769 | 83.7 |
| 429.mcf | 8 | 620 | 118 | **621** | **117** | 626 | 117 | 8 | 620 | 118 | **621** | **117** | 626 | 117 |
| 445.gobmk | 8 | **915** | **91.7** | 915 | 91.8 | 915 | 91.7 | 8 | 829 | 101 | **830** | **101** | 830 | 101 |
| 456.hmmer | 8 | 1082 | 69.0 | **1073** | **69.6** | 1071 | 69.7 | 4 | 406 | 92.0 | 406 | 92.0 | **406** | **92.0** |
| 458.sjeng | 8 | 1107 | 87.4 | 1106 | 87.6 | **1107** | **87.4** | 8 | **1005** | **96.4** | 1005 | 96.3 | 1004 | 96.4 |
| 462.libquantum | 8 | **505** | **328** | 505 | 328 | 504 | 329 | 8 | 506 | 328 | **505** | **328** | 505 | 329 |
| 464.h264ref | 8 | 1535 | 115 | 1452 | 122 | **1474** | **120** | 8 | 1400 | 126 | **1455** | **122** | 1459 | 121 |
| 471.omnetpp | 8 | 636 | 78.6 | **637** | **78.4** | 638 | 78.3 | 8 | 636 | 78.6 | **637** | **78.4** | 638 | 78.3 |
| 473.astar | 8 | **900** | **62.4** | 900 | 62.4 | 900 | 62.4 | 8 | 806 | 69.7 | 807 | 69.6 | **806** | **69.7** |
| 483.xalancbmk | 8 | **504** | **110** | 505 | 109 | 501 | 110 | 8 | **504** | **110** | 505 | 109 | 501 | 110 |

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

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

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

Continued on next page

## Base Portability Flags (Continued)

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
458.sjeng: -DSPEC_CPU_LP64

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## Peak Portability Flags (Continued)

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: basepeak = yes

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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For other inquiries, please contact webmaster@spec.org.

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