# SPEC® CINT2006 Result

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## NEC Corporation

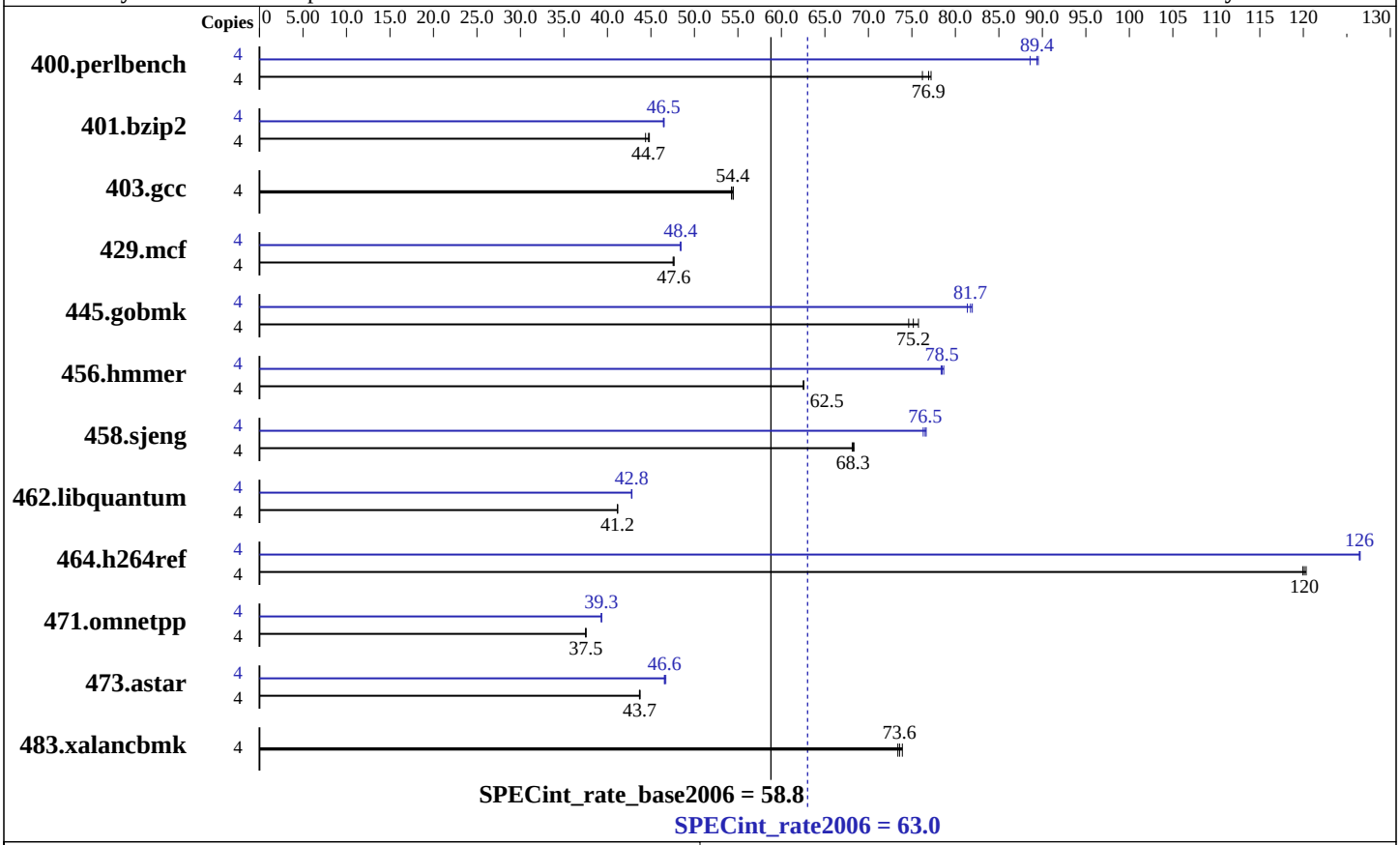
Express5800/120Bb-6
(Intel Xeon processor 5160)

SPECint®_rate2006 = 63.0

SPECint_rate_base2006 = 58.8

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

**Test date:** Oct-2007
**Hardware Availability:** May-2007
**Software Availability:** Jun-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon 5160 |
| CPU Characteristics: | 3.00 GHz, 4 MB L2, 1333 MHz bus |
| CPU MHz: | 3000 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 4 MB I+D on chip per chip |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 1x146.5 GB SAS, 10000RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp for x86_64 |
| Compiler: | Intel C++ Compiler for IA32/EM64T application, Version 10.0 - Build 20070426 Package ID: l_cc_p_10.0.023 |
| Auto Parallel: | No |
| File System: | ext2 |
| System State: | Multiuser, Runlevel 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap library 8.1<br>binutils-2.17.tar.gz, Version 2.17 |

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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 | 4 | 506 | 77.2 | **508** | **76.9** | 513 | 76.2 | 4 | 436 | 89.5 | **437** | **89.4** | 441 | 88.6 |
| 401.bzip2 | 4 | 870 | 44.4 | 861 | 44.8 | **863** | **44.7** | 4 | 830 | 46.5 | 831 | 46.4 | **831** | **46.5** |
| 403.gcc | 4 | 591 | 54.5 | 593 | 54.3 | **592** | **54.4** | 4 | 591 | 54.5 | 593 | 54.3 | **592** | **54.4** |
| 429.mcf | 4 | 767 | 47.5 | **766** | **47.6** | 766 | 47.6 | 4 | 753 | 48.4 | 754 | 48.4 | **753** | **48.4** |
| 445.gobmk | 4 | 562 | 74.6 | 554 | 75.8 | **558** | **75.2** | 4 | 512 | 81.9 | **513** | **81.7** | 516 | 81.4 |
| 456.hmmer | 4 | **597** | **62.5** | 597 | 62.5 | 596 | 62.6 | 4 | 476 | 78.4 | 474 | 78.7 | **476** | **78.5** |
| 458.sjeng | 4 | **709** | **68.3** | 710 | 68.1 | 708 | 68.3 | 4 | **632** | **76.5** | 631 | 76.6 | 634 | 76.3 |
| 462.libquantum | 4 | 2014 | 41.2 | 2013 | 41.2 | **2014** | **41.2** | 4 | 1936 | 42.8 | 1938 | 42.8 | **1937** | **42.8** |
| 464.h264ref | 4 | 736 | 120 | **737** | **120** | 738 | 120 | 4 | **700** | **126** | 700 | 126 | 700 | 127 |
| 471.omnetpp | 4 | **666** | **37.5** | 666 | 37.5 | 667 | 37.5 | 4 | 636 | 39.3 | 636 | 39.3 | **636** | **39.3** |
| 473.astar | 4 | 643 | 43.7 | 642 | 43.8 | **643** | **43.7** | 4 | 603 | 46.6 | **603** | **46.6** | 601 | 46.7 |
| 483.xalancbmk | 4 | 373 | 73.9 | **375** | **73.6** | 376 | 73.4 | 4 | 373 | 73.9 | **375** | **73.6** | 376 | 73.4 |

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page

## Base Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-fast

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -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/cce/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/include

456.hmmer: /opt/intel/cce/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/include

C++ benchmarks:
icpc

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

# Peak Optimization Flags

C benchmarks:

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -ansi-alias -prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast`

403.gcc: `basepeak = yes`

429.mcf: `-fast -prefetch`

445.gobmk: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O2 -ipo -no-prec_div -ansi-alias`

456.hmmer: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4`

462.libquantum: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always`

464.h264ref: `Same as 456.hmmer`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -no-prec_div -ansi-alias -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap`

473.astar: `Same as 471.omnetpp`

483.xalancbmk: `basepeak = yes`

# Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.xml`

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