



SPEC® CINT2006 Result

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NEC Corporation

Express5800/120Rj-2
(Intel Xeon E5420)

SPECint®_rate2006 = 62.4

SPECint_rate_base2006 = 52.7

CPU2006 license: 9006

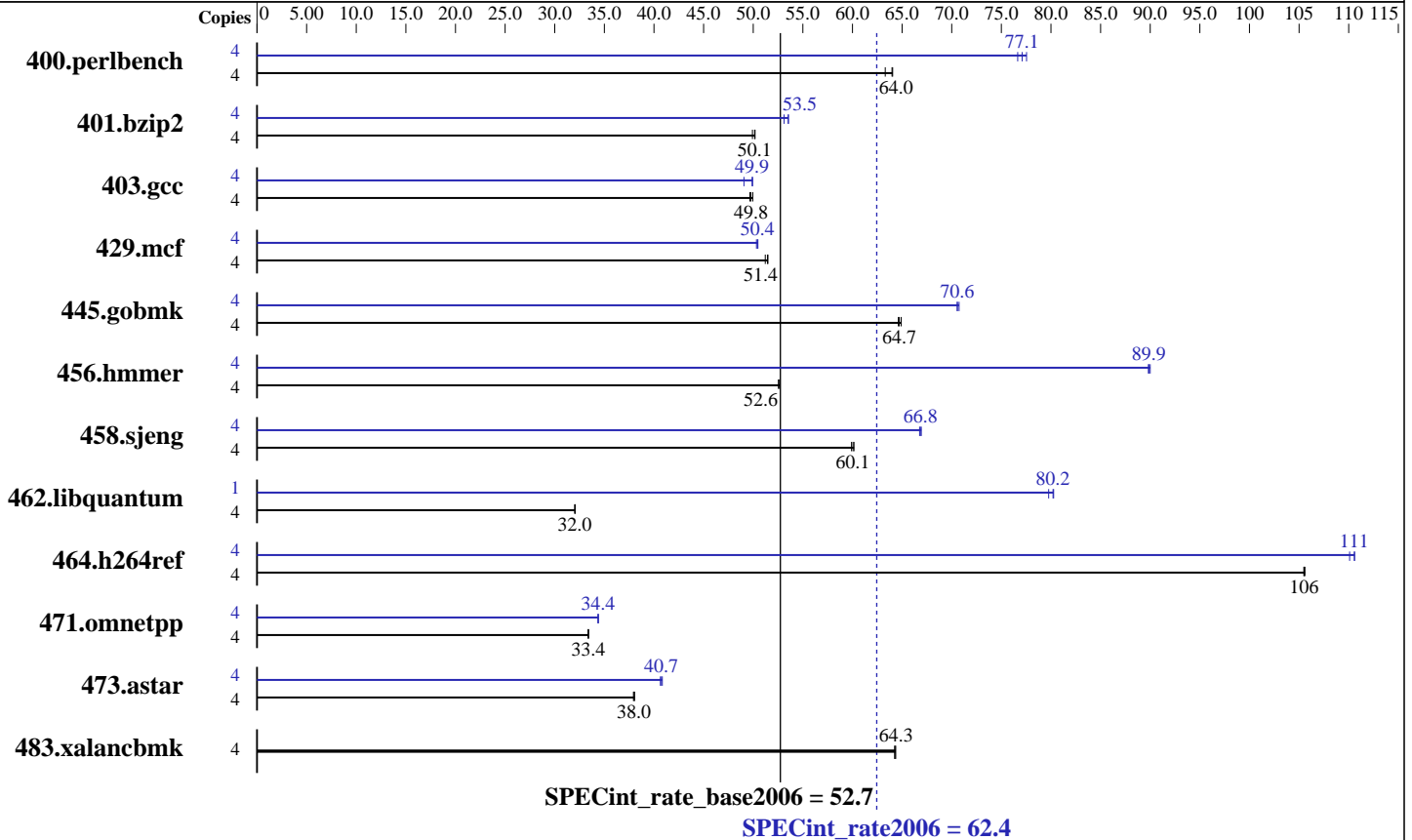
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2008

Hardware Availability: Apr-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 2.50 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores
 L3 Cache: None
 Other Cache: None
 Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
 Disk Subsystem: 1x73.2 GB SAS, 15000RPM
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: L_cc_p_10.1.008
 Auto Parallel: Yes
 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-2.17.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 | 611 | 64.0 | 617 | 63.3 | 610 | 64.0 | 4 | 507 | 77.1 | 510 | 76.6 | 504 | 77.5 |
| 401.bzip2 | 4 | 769 | 50.2 | 770 | 50.1 | 773 | 49.9 | 4 | 727 | 53.1 | 721 | 53.5 | 721 | 53.5 |
| 403.gcc | 4 | 648 | 49.7 | 647 | 49.8 | 645 | 50.0 | 4 | 656 | 49.1 | 645 | 49.9 | 646 | 49.9 |
| 429.mcf | 4 | 709 | 51.4 | 712 | 51.2 | 709 | 51.5 | 4 | 723 | 50.5 | 725 | 50.3 | 723 | 50.4 |
| 445.gobmk | 4 | 648 | 64.7 | 646 | 64.9 | 649 | 64.6 | 4 | 595 | 70.6 | 593 | 70.7 | 595 | 70.6 |
| 456.hmmer | 4 | 710 | 52.5 | 708 | 52.7 | 710 | 52.6 | 4 | 415 | 89.9 | 415 | 90.0 | 416 | 89.8 |
| 458.sjeng | 4 | 808 | 59.9 | 805 | 60.2 | 806 | 60.1 | 4 | 723 | 66.9 | 724 | 66.8 | 725 | 66.8 |
| 462.libquantum | 4 | 2589 | 32.0 | 2585 | 32.1 | 2588 | 32.0 | 1 | 260 | 79.8 | 258 | 80.2 | 258 | 80.3 |
| 464.h264ref | 4 | 839 | 105 | 838 | 106 | 839 | 106 | 4 | 801 | 111 | 800 | 111 | 804 | 110 |
| 471.omnetpp | 4 | 749 | 33.4 | 749 | 33.4 | 749 | 33.4 | 4 | 727 | 34.4 | 727 | 34.4 | 727 | 34.4 |
| 473.astar | 4 | 738 | 38.0 | 740 | 37.9 | 739 | 38.0 | 4 | 688 | 40.8 | 689 | 40.7 | 691 | 40.6 |
| 483.xalancbmk | 4 | 429 | 64.4 | 429 | 64.3 | 430 | 64.2 | 4 | 429 | 64.4 | 429 | 64.3 | 430 | 64.2 |

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
OMP_NUM_THREADS set to number of cores

Platform Notes

Bios settings:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Disabled
Intel SpeedStep Technology: Disabled

General Notes

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

The NEC Express5800/120Rh-1(Intel Xeon E5420) and the NEC Express5800/120Rj-2(Intel Xeon E5420) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon E5420) model.

Base Compiler Invocation

C benchmarks:
icc

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Base Compiler Invocation (Continued)

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:
-fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib -lsmarheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc



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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 -prefetch
403.gcc: -fast -inline-calloc -opt-malloc-options=3
429.mcf: -fast -prefetch
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo
-no-prec-div -ansi-alias
456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
462.libquantum: -fast -unroll4 -Ob0 -prefetch
-opt-streaming-stores always -vec-guard-write
-opt-malloc-options=3 -parallel -par-runtime-control
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmarheap
473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmarheap
483.xalancbmk: basepeak = yes



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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-Intel-ic10.1-INT-ia32-linux-flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.xml>

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

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