



SPEC® CINT2006 Result

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NEC Corporation

SPECint®_rate2006 = 54.4

Express5800/120Rj-2
(Intel Xeon E5405)

SPECint_rate_base2006 = 46.1

CPU2006 license: 9006

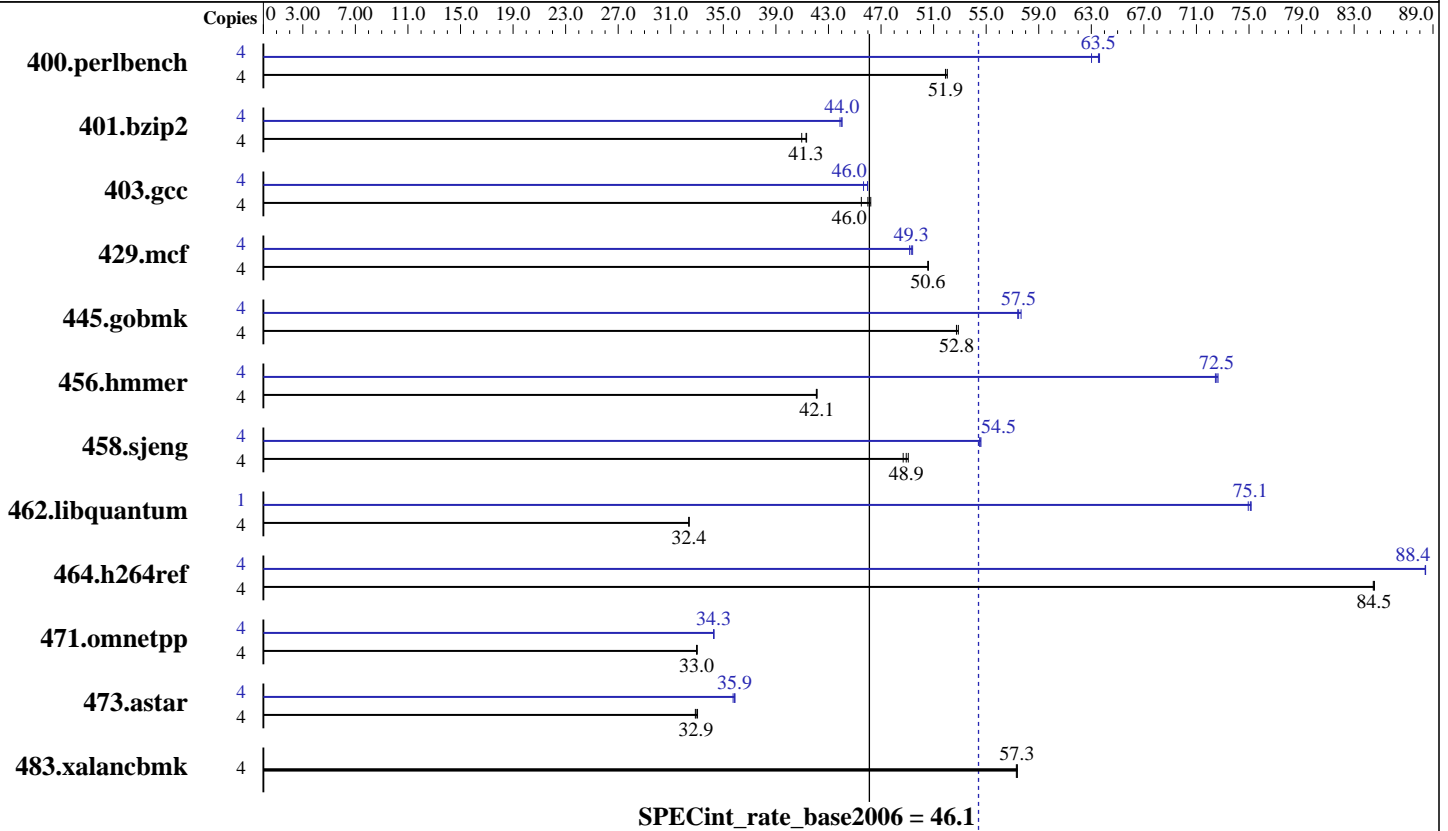
Test date: May-2008

Test sponsor: NEC Corporation

Hardware Availability: Apr-2008

Tested by: NEC Corporation

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5405
 CPU Characteristics: 2.00 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 2000
 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	751	52.0	<u>753</u>	<u>51.9</u>	753	51.9	4	620	63.0	<u>615</u>	<u>63.5</u>	614	63.6
401.bzip2	4	934	41.3	942	41.0	<u>935</u>	<u>41.3</u>	4	<u>877</u>	<u>44.0</u>	877	44.0	880	43.9
403.gcc	4	<u>700</u>	<u>46.0</u>	708	45.5	697	46.2	4	<u>700</u>	<u>46.0</u>	705	45.7	700	46.0
429.mcf	4	721	50.6	722	50.6	<u>721</u>	<u>50.6</u>	4	<u>740</u>	<u>49.3</u>	738	49.4	742	49.2
445.gobmk	4	793	52.9	796	52.7	<u>795</u>	<u>52.8</u>	4	728	57.7	731	57.4	<u>730</u>	<u>57.5</u>
456.hmmer	4	<u>886</u>	<u>42.1</u>	887	42.1	886	42.1	4	515	72.4	<u>514</u>	<u>72.5</u>	514	72.6
458.sjeng	4	<u>989</u>	<u>48.9</u>	994	48.7	986	49.1	4	886	54.6	888	54.5	<u>888</u>	<u>54.5</u>
462.libquantum	4	2560	32.4	<u>2559</u>	<u>32.4</u>	2559	32.4	1	<u>276</u>	<u>75.1</u>	276	74.9	276	75.2
464.h264ref	4	1047	84.5	<u>1048</u>	<u>84.5</u>	1048	84.5	4	<u>1001</u>	<u>88.4</u>	1001	88.4	1001	88.4
471.omnetpp	4	758	33.0	<u>758</u>	<u>33.0</u>	757	33.0	4	729	34.3	<u>730</u>	<u>34.3</u>	730	34.3
473.astar	4	854	32.9	<u>853</u>	<u>32.9</u>	850	33.0	4	<u>783</u>	<u>35.9</u>	783	35.9	786	35.7
483.xalancbmk	4	482	57.3	<u>481</u>	<u>57.3</u>	481	57.4	4	482	57.3	<u>481</u>	<u>57.3</u>	481	57.4

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
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 E5405) and the NEC Express5800/120Rj-2(Intel Xeon E5405) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon E5405) 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 -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/10.1.008/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 other inquiries, please contact webmaster@spec.org.

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