



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/140Hf  
(Intel Xeon processor 7110M)

SPECint®\_rate2006 = 55.7

SPECint\_rate\_base2006 = 51.8

CPU2006 license: 9006

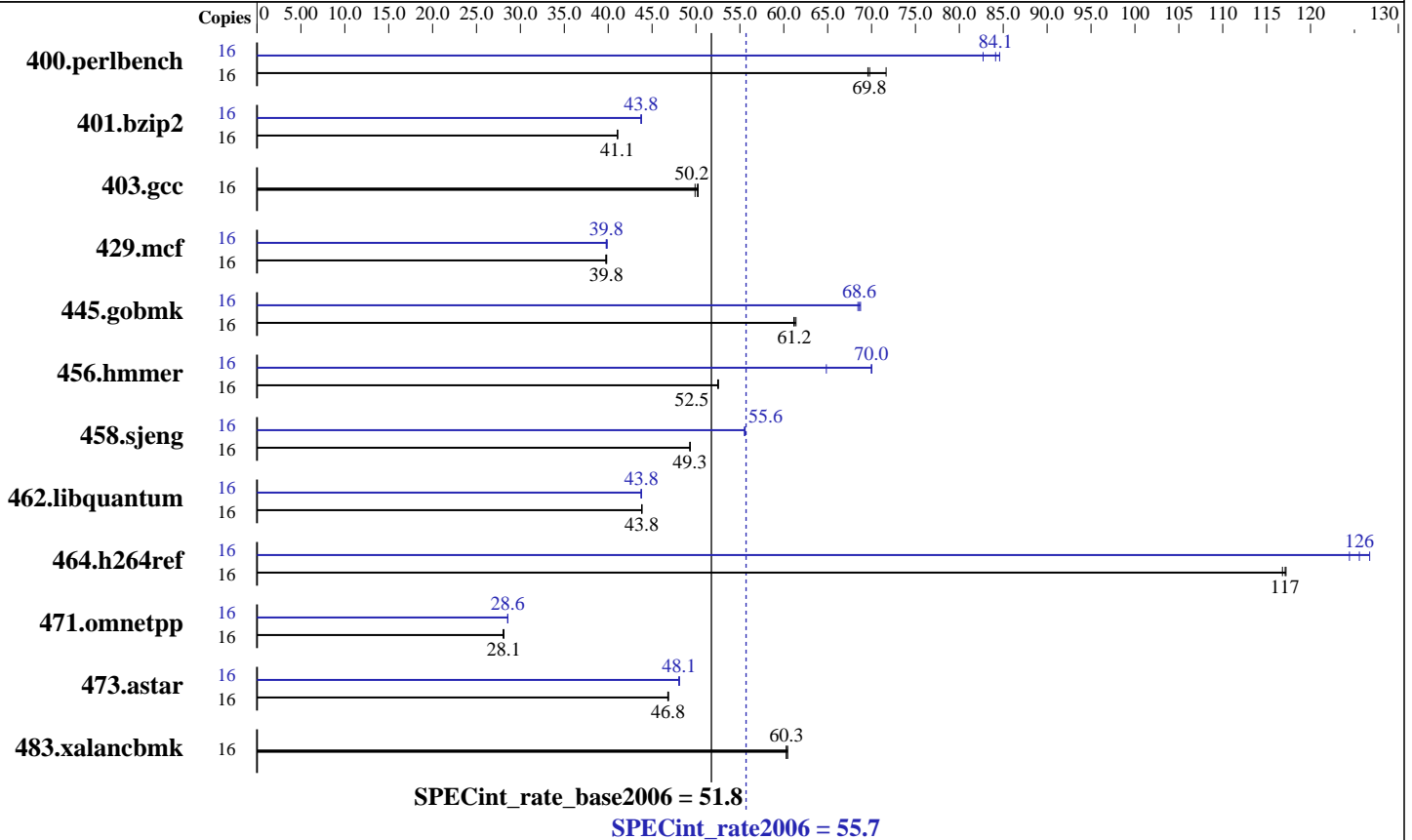
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Nov-2007

Hardware Availability: Oct-2006

Software Availability: Jun-2007



### Hardware

CPU Name: Intel Xeon 7110M  
 CPU Characteristics: 2.60 GHz, 800 MHz bus  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2,4 chips  
 Primary Cache: 12 K micro-ops I + 16 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (16x2 GB PC2-3200R, 2 rank, CL3-3-3, ECC)  
 Disk Subsystem: 1x146.5 GB SAS, 15000RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64), Kernel 2.6.16.21-0.8-smp  
 Compiler: Intel C++ Compiler for IA32/EM64T application, Version 10.0 - Build 20070426 Package ID: I\_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



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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	16	2181	71.7	2246	69.6	<u>2240</u>	<u>69.8</u>	16	1848	84.6	1890	82.7	<u>1858</u>	<u>84.1</u>
401.bzip2	16	<u>3760</u>	<u>41.1</u>	3761	41.0	3759	41.1	16	3526	43.8	<u>3528</u>	<u>43.8</u>	3531	43.7
403.gcc	16	2581	49.9	2563	50.2	<u>2568</u>	<u>50.2</u>	16	2581	49.9	2563	50.2	<u>2568</u>	<u>50.2</u>
429.mcf	16	3673	39.7	<u>3667</u>	<u>39.8</u>	3663	39.8	16	3658	39.9	3669	39.8	<u>3667</u>	<u>39.8</u>
445.gobmk	16	2734	61.4	<u>2742</u>	<u>61.2</u>	2745	61.2	16	<u>2446</u>	<u>68.6</u>	2452	68.4	2441	68.7
456.hmmer	16	2841	52.5	2845	52.5	<u>2841</u>	<u>52.5</u>	16	<u>2134</u>	<u>70.0</u>	2302	64.9	2132	70.0
458.sjeng	16	<u>3925</u>	<u>49.3</u>	3923	49.4	3927	49.3	16	3482	55.6	<u>3483</u>	<u>55.6</u>	3488	55.5
462.libquantum	16	<u>7563</u>	<u>43.8</u>	7563	43.8	7564	43.8	16	7568	43.8	7579	43.7	<u>7574</u>	<u>43.8</u>
464.h264ref	16	3021	117	3032	117	<u>3024</u>	<u>117</u>	16	2794	127	<u>2820</u>	<u>126</u>	2846	124
471.omnetpp	16	<u>3557</u>	<u>28.1</u>	3567	28.0	3557	28.1	16	3500	28.6	<u>3501</u>	<u>28.6</u>	3502	28.6
473.astar	16	2396	46.9	2400	46.8	<u>2399</u>	<u>46.8</u>	16	2334	48.1	<u>2336</u>	<u>48.1</u>	2338	48.0
483.xalancbmk	16	1826	60.4	<u>1831</u>	<u>60.3</u>	1831	60.3	16	1826	60.4	<u>1831</u>	<u>60.3</u>	1831	60.3

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

The Express5800/140Hf and the Express5800/140Re-4 models are electronically equivalent.

The results have been measured on a Express5800/140Re-4 model.

## Base Compiler Invocation

C benchmarks:  
icc -static(\*)

C++ benchmarks:  
icpc

(\*) Indicates a compiler flag that was found in a non-compiler variable.



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xP -ipo -O3 -no-prec-div

C++ benchmarks:  
-xP -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 -static(\*)

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

445.gobmk: icc

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 -static(\*)

C++ benchmarks:  
icpc

(\*) Indicates a compiler flag that was found in a non-compiler variable.



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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) -xP -ipo -O3  
-no-prec-div -ansi-alias -prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3  
-no-prec-div

403.gcc: basepeak = yes

429.mcf: -xP -ipo -O3 -no-prec-div -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xP -O2 -ipo  
-no-prec\_div -ansi-alias

456.hmmer: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3  
-no-prec-div -unroll2 -ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3  
-no-prec-div -unroll4

462.libquantum: Same as 458.sjeng

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xP -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



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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-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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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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