



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/140Hf  
(Intel Xeon processor 7110M)

SPECint®2006 = **9.10**

SPECint\_base2006 = **8.49**

CPU2006 license: 9006

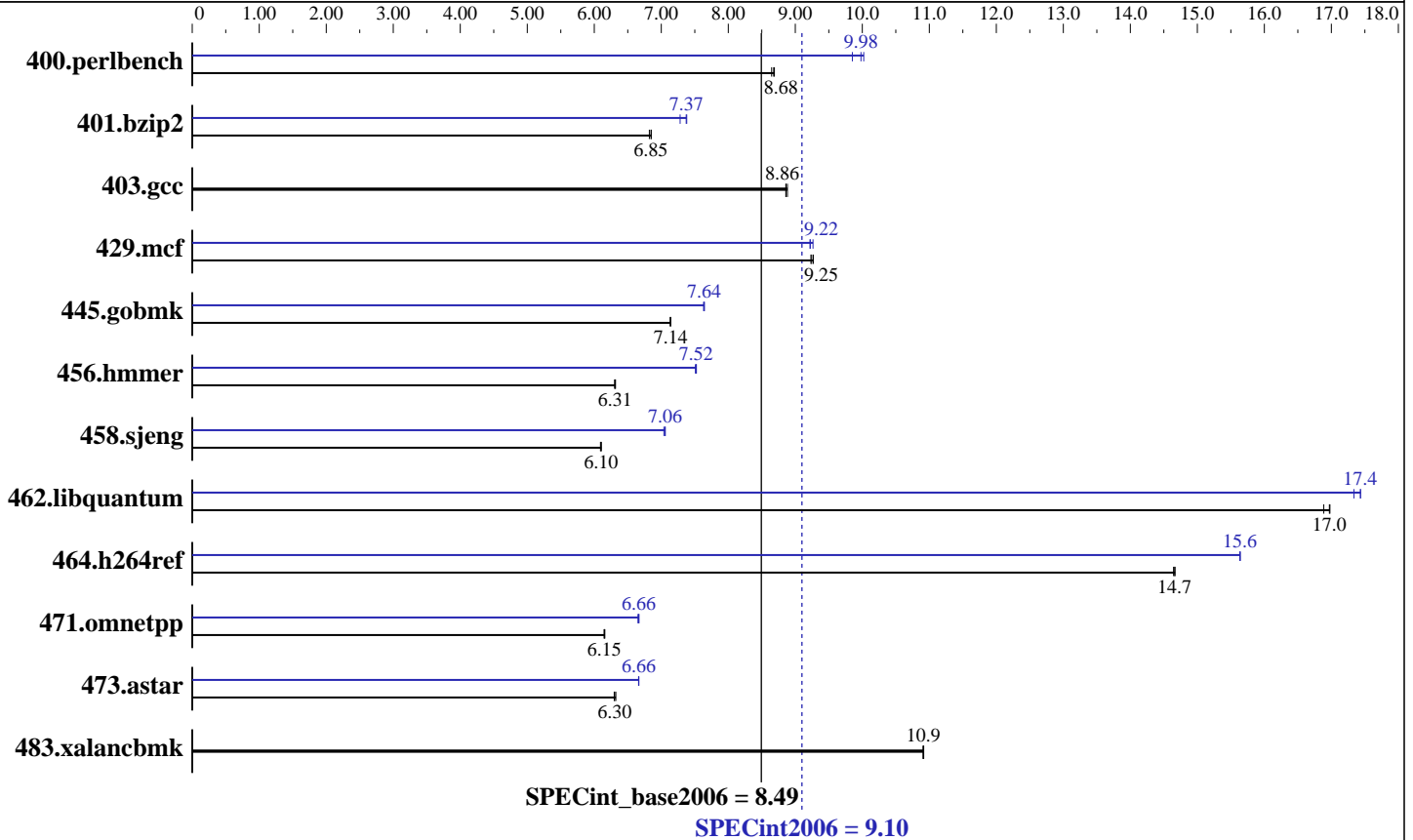
Test sponsor: NEC Corporation

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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>1126</u></b>	<b><u>8.68</u></b>	1130	8.65	1125	8.69	<b><u>979</u></b>	<b><u>9.98</u></b>	975	10.0	992	9.85
401.bzip2	<b><u>1409</u></b>	<b><u>6.85</u></b>	1409	6.85	1415	6.82	1325	7.28	1308	7.38	<b><u>1309</u></b>	<b><u>7.37</u></b>
403.gcc	906	8.88	909	8.86	<b><u>908</u></b>	<b><u>8.86</u></b>	906	8.88	909	8.86	<b><u>908</u></b>	<b><u>8.86</u></b>
429.mcf	984	9.27	<b><u>986</u></b>	<b><u>9.25</u></b>	988	9.23	989	9.22	<b><u>989</u></b>	<b><u>9.22</u></b>	984	9.26
445.gobmk	1470	7.13	<b><u>1469</u></b>	<b><u>7.14</u></b>	1469	7.14	1375	7.63	<b><u>1373</u></b>	<b><u>7.64</u></b>	1373	7.64
456.hmmmer	1477	6.32	1480	6.30	<b><u>1478</u></b>	<b><u>6.31</u></b>	<b><u>1240</u></b>	<b><u>7.52</u></b>	1243	7.51	1240	7.52
458.sjeng	1982	6.10	<b><u>1983</u></b>	<b><u>6.10</u></b>	1986	6.09	1719	7.04	<b><u>1715</u></b>	<b><u>7.06</u></b>	1714	7.06
462.libquantum	1220	17.0	<b><u>1221</u></b>	<b><u>17.0</u></b>	1227	16.9	<b><u>1189</u></b>	<b><u>17.4</u></b>	1195	17.3	1188	17.4
464.h264ref	1509	14.7	<b><u>1509</u></b>	<b><u>14.7</u></b>	1511	14.6	1415	15.6	<b><u>1415</u></b>	<b><u>15.6</u></b>	1415	15.6
471.omnetpp	1015	6.16	<b><u>1016</u></b>	<b><u>6.15</u></b>	1017	6.15	<b><u>938</u></b>	<b><u>6.66</u></b>	940	6.65	937	6.67
473.astar	<b><u>1113</u></b>	<b><u>6.30</u></b>	1115	6.30	1110	6.32	1054	6.66	<b><u>1054</u></b>	<b><u>6.66</u></b>	1053	6.67
483.xalancbmk	632	10.9	633	10.9	<b><u>632</u></b>	<b><u>10.9</u></b>	632	10.9	633	10.9	<b><u>632</u></b>	<b><u>10.9</u></b>

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

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, 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.hmmmer: /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.xalanbmk: -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.xalanbmk: 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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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