



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/120Ri-2  
(Intel Xeon processor 5110)

SPECint®\_rate2006 = 36.7

SPECint\_rate\_base2006 = 35.0

CPU2006 license: 9006

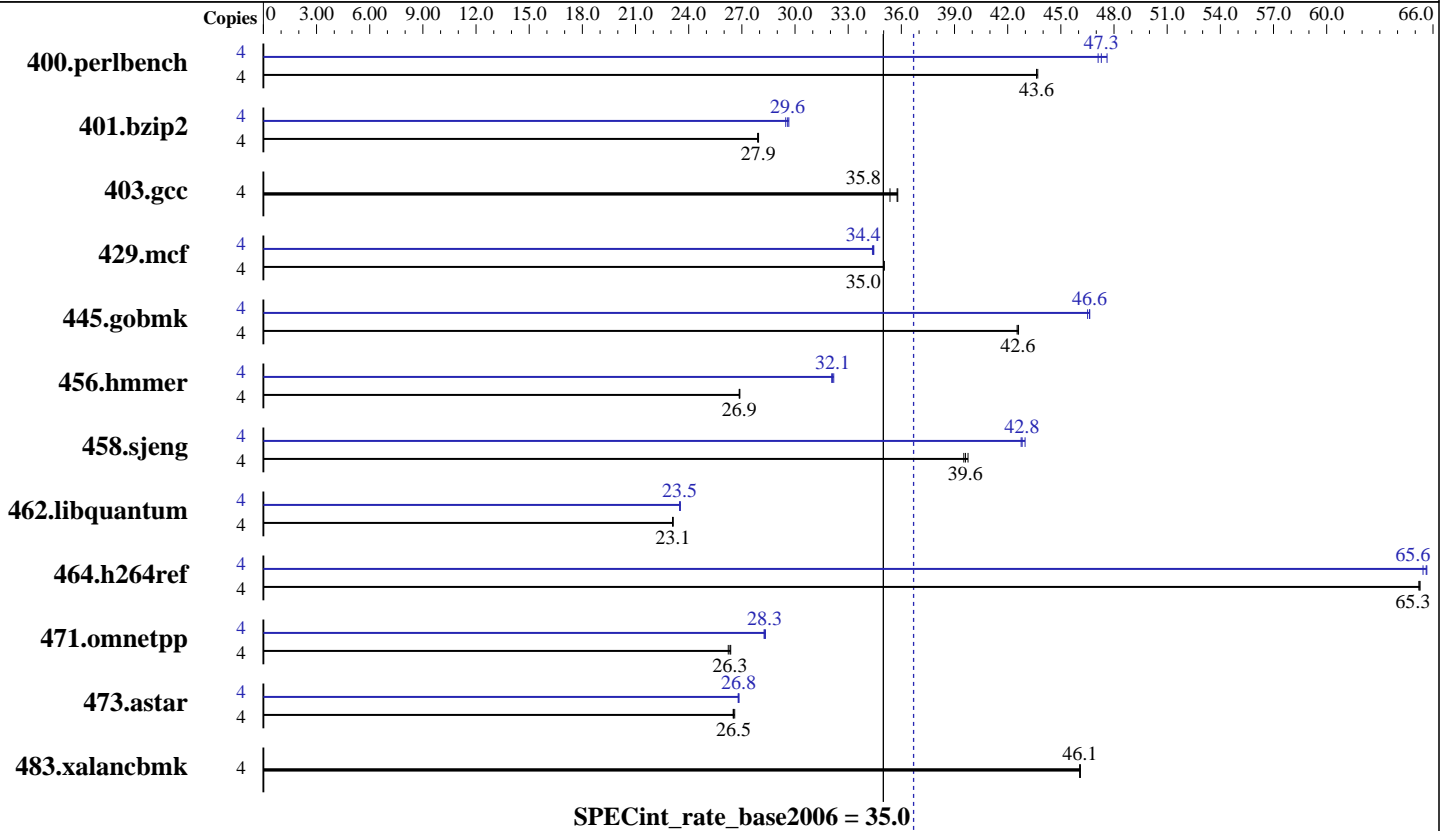
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2007

Hardware Availability: May-2007

Software Availability: Apr-2007



### Hardware

CPU Name: Intel Xeon 5110  
 CPU Characteristics: 1.60 GHz, 4MB L2, 1066MHz bus  
 CPU MHz: 1600  
 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 DDR2 5300F, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x146.5 GB SAS, 15000RPM  
 Other Hardware: None

### Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp on an x86\_64  
 Compiler: Intel C++ Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package-ID: l\_cc\_c\_9.1.049  
 Auto Parallel: No  
 File System: ReiserFS  
 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	4	896	43.6	<b>896</b>	<b>43.6</b>	894	43.7	4	830	47.1	821	47.6	<b>827</b>	<b>47.3</b>
401.bzip2	4	<b>1382</b>	<b>27.9</b>	1384	27.9	1381	27.9	4	1302	29.7	<b>1305</b>	<b>29.6</b>	1310	29.5
403.gcc	4	911	35.4	899	35.8	<b>900</b>	<b>35.8</b>	4	911	35.4	899	35.8	<b>900</b>	<b>35.8</b>
429.mcf	4	<b>1041</b>	<b>35.0</b>	1042	35.0	1041	35.0	4	1059	34.4	<b>1060</b>	<b>34.4</b>	1061	34.4
445.gobmk	4	987	42.5	985	42.6	<b>985</b>	<b>42.6</b>	4	900	46.6	902	46.5	<b>900</b>	<b>46.6</b>
456.hmmmer	4	1388	26.9	<b>1389</b>	<b>26.9</b>	1390	26.9	4	<b>1162</b>	<b>32.1</b>	1160	32.2	1164	32.1
458.sjeng	4	1217	39.8	1225	39.5	<b>1222</b>	<b>39.6</b>	4	1132	42.8	<b>1130</b>	<b>42.8</b>	1126	43.0
462.libquantum	4	3585	23.1	<b>3586</b>	<b>23.1</b>	3590	23.1	4	<b>3527</b>	<b>23.5</b>	3522	23.5	3528	23.5
464.h264ref	4	1358	65.2	<b>1356</b>	<b>65.3</b>	1356	65.3	4	1348	65.7	1353	65.4	<b>1349</b>	<b>65.6</b>
471.omnetpp	4	953	26.2	948	26.4	<b>950</b>	<b>26.3</b>	4	882	28.3	885	28.3	<b>884</b>	<b>28.3</b>
473.astar	4	1059	26.5	<b>1058</b>	<b>26.5</b>	1056	26.6	4	<b>1047</b>	<b>26.8</b>	1048	26.8	1046	26.8
483.xalancbmk	4	<b>599</b>	<b>46.1</b>	599	46.1	599	46.1	4	<b>599</b>	<b>46.1</b>	599	46.1	599	46.1

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

The system bus runs at 1066 MHz  
All binaries were built with 32-bit Intel compiler except:  
401.bzip2, 456.hmmmer and 462.libquantum in peak were built with  
64-bit Intel compiler by changing the path for include and library files.

The Express5800/120Rg-1 and the Express5800/120Ri-2 models are  
electronically equivalent.  
The results have been measured on a Express5800/120Ri-2 model.

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_X64  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-fast

C++ benchmarks:

-xP -O3 -ipo -no-prec-div -L/opt/SmartHeap\_8.1/lib -lsmartheap

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

401.bzip2: /opt/intel/cce/9.1.049/bin/icc  
-I/opt/intel/cce/9.1.049/include  
-L/opt/intel/cce/9.1.049/lib

456.hmmer: /opt/intel/cce/9.1.049/bin/icc  
-I/opt/intel/cce/9.1.049/include  
-L/opt/intel/cce/9.1.049/lib

462.libquantum: /opt/intel/cce/9.1.049/bin/icc  
-I/opt/intel/cce/9.1.049/include  
-L/opt/intel/cce/9.1.049/lib

C++ benchmarks:

icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX



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## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

401.bzip2: -fast

403.gcc: basepeak = yes

429.mcf: -prof\_gen(pass 1) -prof\_use(pass 2) -fast  
-L/opt/SmartHeap\_8.1/lib -lsmartheap

445.gobmk: Same as 429.mcf

456.hmmer: Same as 400.perlbench

458.sjeng: Same as 429.mcf

462.libquantum: Same as 400.perlbench

464.h264ref: Same as 429.mcf

C++ benchmarks:

471.omnetpp: -prof\_gen(pass 1) -prof\_use(pass 2) -xP -O3 -ipo  
-no-prec-div -L/opt/SmartHeap\_8.1/lib -lsmartheap

473.astar: -prof\_gen(pass 1) -prof\_use(pass 2) -fast  
-L/opt/SmartHeap\_8.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.20090714.html>

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

<http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.20090714.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.0.  
Report generated on Tue Jul 22 12:59:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 10 July 2007.