



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/i120Ra-e1  
(Intel Xeon L5240)

SPECint®2006 = 25.1

SPECint\_base2006 = 21.0

CPU2006 license: 9006

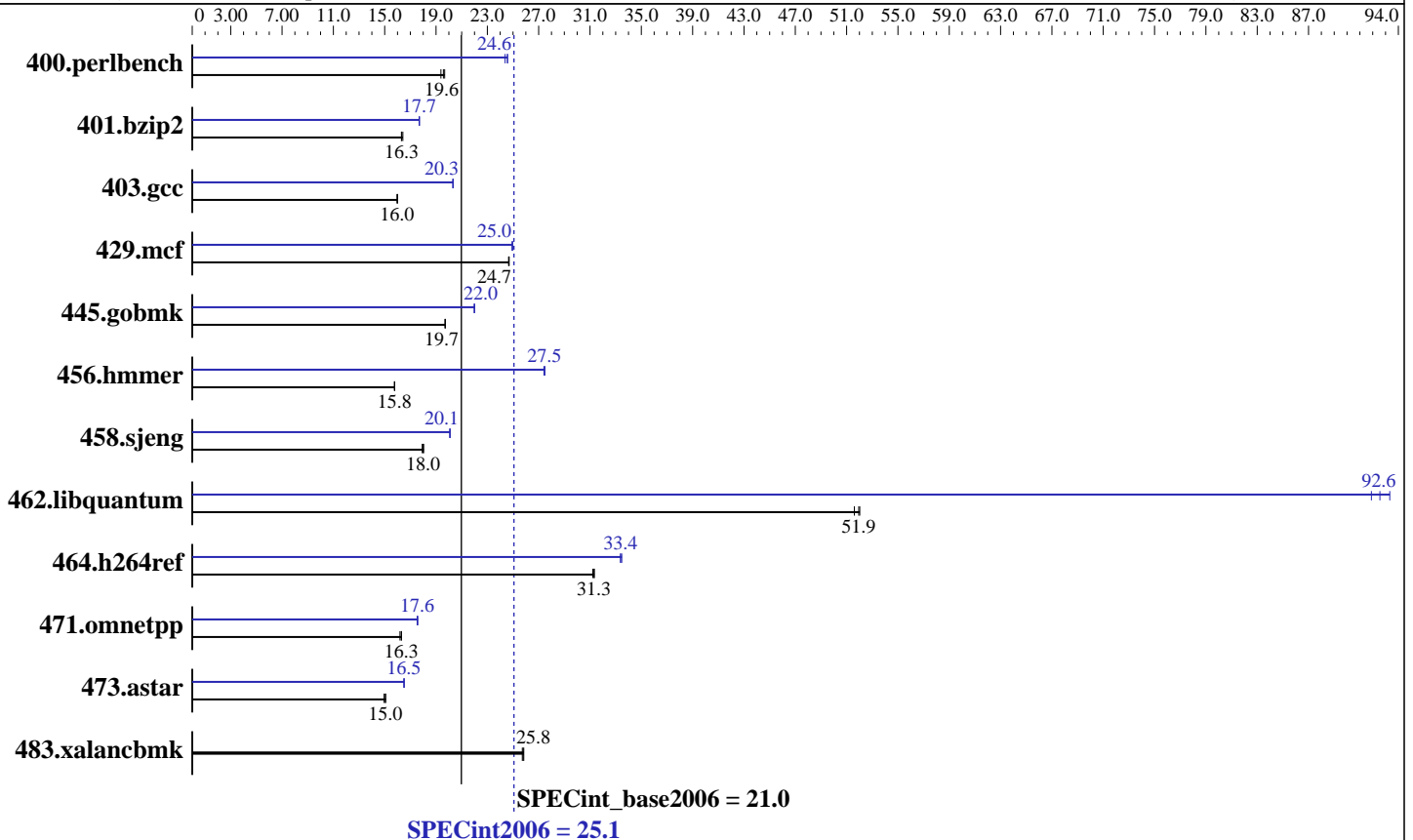
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2008

Hardware Availability: May-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon L5240  
 CPU Characteristics: 3.00 GHz, 6 MB L2, 1333 MHz bus  
 CPU MHz: 3000  
 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: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (4x4 GB PC2-5300P, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x80.0 GB SATAII, 7200RPM  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>499</u></b>	<b><u>19.6</u></b>	497	19.7	504	19.4	<b><u>398</u></b>	<b><u>24.6</u></b>	398	24.6	401	24.4
401.bzip2	588	16.4	<b><u>591</u></b>	<b><u>16.3</u></b>	592	16.3	545	17.7	<b><u>545</u></b>	<b><u>17.7</u></b>	545	17.7
403.gcc	<b><u>504</u></b>	<b><u>16.0</u></b>	504	16.0	503	16.0	396	20.3	396	20.3	<b><u>396</u></b>	<b><u>20.3</u></b>
429.mcf	370	24.7	<b><u>369</u></b>	<b><u>24.7</u></b>	369	24.7	366	24.9	<b><u>366</u></b>	<b><u>25.0</u></b>	365	25.0
445.gobmk	532	19.7	532	19.7	<b><u>532</u></b>	<b><u>19.7</u></b>	477	22.0	<b><u>477</u></b>	<b><u>22.0</u></b>	477	22.0
456.hmmer	591	15.8	<b><u>592</u></b>	<b><u>15.8</u></b>	592	15.8	<b><u>340</u></b>	<b><u>27.5</u></b>	340	27.4	340	27.5
458.sjeng	671	18.0	<b><u>672</u></b>	<b><u>18.0</u></b>	675	17.9	603	20.1	<b><u>602</u></b>	<b><u>20.1</u></b>	602	20.1
462.libquantum	402	51.6	<b><u>399</u></b>	<b><u>51.9</u></b>	398	52.0	222	93.3	<b><u>224</u></b>	<b><u>92.6</u></b>	225	91.9
464.h264ref	<b><u>707</u></b>	<b><u>31.3</u></b>	709	31.2	706	31.3	663	33.4	661	33.5	<b><u>663</u></b>	<b><u>33.4</u></b>
471.omnetpp	383	16.3	386	16.2	<b><u>384</u></b>	<b><u>16.3</u></b>	356	17.5	<b><u>356</u></b>	<b><u>17.6</u></b>	356	17.6
473.astar	469	15.0	<b><u>467</u></b>	<b><u>15.0</u></b>	466	15.1	<b><u>425</u></b>	<b><u>16.5</u></b>	425	16.5	425	16.5
483.xalancbmk	267	25.8	<b><u>268</u></b>	<b><u>25.8</u></b>	268	25.7	267	25.8	<b><u>268</u></b>	<b><u>25.8</u></b>	268	25.7

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: Enabled  
Intel SpeedStep Technology: Disabled

## General Notes

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

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc



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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:

-fast -vec-guard-write -parallel -par-runtime-control

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

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

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  
-auto-ilp32

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.hmmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive  
-auto-ilp32

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 -lsmartheap

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 -lsmartheap

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](mailto:webmaster@spec.org).

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