



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

SPECint®\_rate2006 = 106

Express5800/R120d-1E (Intel Xeon E5-2407)

SPECint\_rate\_base2006 = 102

CPU2006 license: 9006

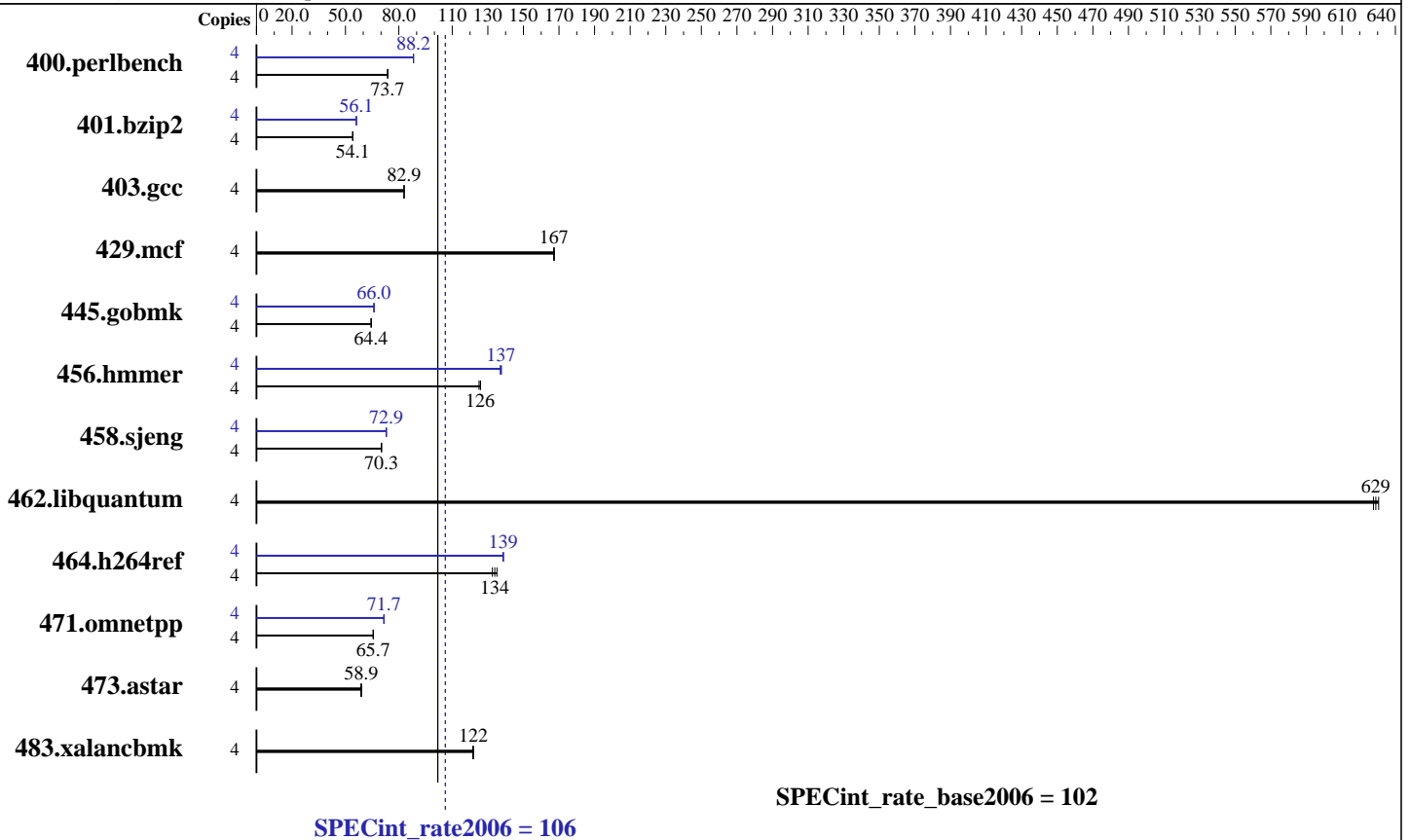
Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: May-2012

Tested by: NEC Corporation

Software Availability: Dec-2011



SPECint\_rate\_base2006 = 102

### Hardware

CPU Name: Intel Xeon E5-2407  
 CPU Characteristics:  
 CPU MHz: 2200  
 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: 256 KB I+D on chip per core  
 L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1066 MHz and CL7)  
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 Kernel 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux;  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

SPECint\_rate2006 = 106

Express5800/R120d-1E (Intel Xeon E5-2407)

SPECint\_rate\_base2006 = 102

CPU2006 license: 9006

Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: May-2012

Tested by: NEC Corporation

Software Availability: Dec-2011

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	530	73.7	530	73.8	<b>530</b>	<b>73.7</b>	4	<b>443</b>	<b>88.2</b>	443	88.3	443	88.2
401.bzip2	4	713	54.2	<b>713</b>	<b>54.1</b>	714	54.0	4	<b>688</b>	<b>56.1</b>	687	56.2	689	56.0
403.gcc	4	388	83.0	388	82.9	<b>388</b>	<b>82.9</b>	4	388	83.0	388	82.9	<b>388</b>	<b>82.9</b>
429.mcf	4	218	167	<b>218</b>	<b>167</b>	218	167	4	218	167	<b>218</b>	<b>167</b>	218	167
445.gobmk	4	651	64.4	<b>651</b>	<b>64.4</b>	651	64.5	4	635	66.0	635	66.1	<b>635</b>	<b>66.0</b>
456.hammer	4	<b>297</b>	<b>126</b>	296	126	298	125	4	<b>271</b>	<b>137</b>	271	138	273	137
458.sjeng	4	<b>689</b>	<b>70.3</b>	689	70.3	689	70.2	4	<b>664</b>	<b>72.9</b>	663	73.1	664	72.9
462.libquantum	4	132	628	<b>132</b>	<b>629</b>	131	631	4	132	628	<b>132</b>	<b>629</b>	131	631
464.h264ref	4	655	135	668	133	<b>661</b>	<b>134</b>	4	639	138	<b>638</b>	<b>139</b>	638	139
471.omnetpp	4	380	65.7	382	65.5	<b>381</b>	<b>65.7</b>	4	349	71.7	349	71.5	<b>349</b>	<b>71.7</b>
473.astar	4	<b>477</b>	<b>58.9</b>	476	59.0	478	58.7	4	<b>477</b>	<b>58.9</b>	476	59.0	478	58.7
483.xalancbmk	4	227	122	<b>227</b>	<b>122</b>	226	122	4	227	122	<b>227</b>	<b>122</b>	226	122

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS Settings:  
Energy Performance: Performance

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

The Express5800/R120d-1E and the Express5800/R120d-2E models are electronically equivalent. The results have been measured on the Express5800/R120d-1E model.

Added glibc-static-2.12-1.47.el6.x86\_64.rpm to enable static linking

Transparent Huge Pages enabled with:

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 106

Express5800/R120d-1E (Intel Xeon E5-2407)

SPECint\_rate\_base2006 = 102

CPU2006 license: 9006

Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: May-2012

Tested by: NEC Corporation

Software Availability: Dec-2011

## General Notes (Continued)

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

## Base Compiler Invocation

C benchmarks:  
icc -m32  
  
C++ benchmarks:  
icpc -m32

## Base Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-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 -m32  
  
400.perlbench: icc -m64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 106

Express5800/R120d-1E (Intel Xeon E5-2407)

SPECint\_rate\_base2006 = 102

CPU2006 license: 9006

Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: May-2012

Tested by: NEC Corporation

Software Availability: Dec-2011

## Peak Compiler Invocation (Continued)

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:

`icpc -m32`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`  
401.bzip2: `-DSPEC_CPU_LP64`  
456.hmmer: `-DSPEC_CPU_LP64`  
458.sjeng: `-DSPEC_CPU_LP64`  
462.libquantum: `-DSPEC_CPU_LINUX`  
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`  
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`  
`-auto-ilp32`

401.bzip2: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`  
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`  
`-opt-prefetch -auto-ilp32 -ansi-alias`

403.gcc: `basepeak = yes`

429.mcf: `basepeak = yes`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`  
`-ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

458.sjeng: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`  
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`  
`-unroll4 -auto-ilp32`

462.libquantum: `basepeak = yes`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECint\_rate2006 = 106

Express5800/R120d-1E (Intel Xeon E5-2407)

SPECint\_rate\_base2006 = 102

CPU2006 license: 9006

Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: May-2012

Tested by: NEC Corporation

Software Availability: Dec-2011

## Peak Optimization Flags (Continued)

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/opt/SmartHeap\_8.1/lib -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 12:33:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 17 July 2012.