



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

**SPECint®\_rate2006 = 88.9**

Express5800/R120d-1E (Intel Xeon E5-2403)

**SPECint\_rate\_base2006 = 85.4**

CPU2006 license: 9006

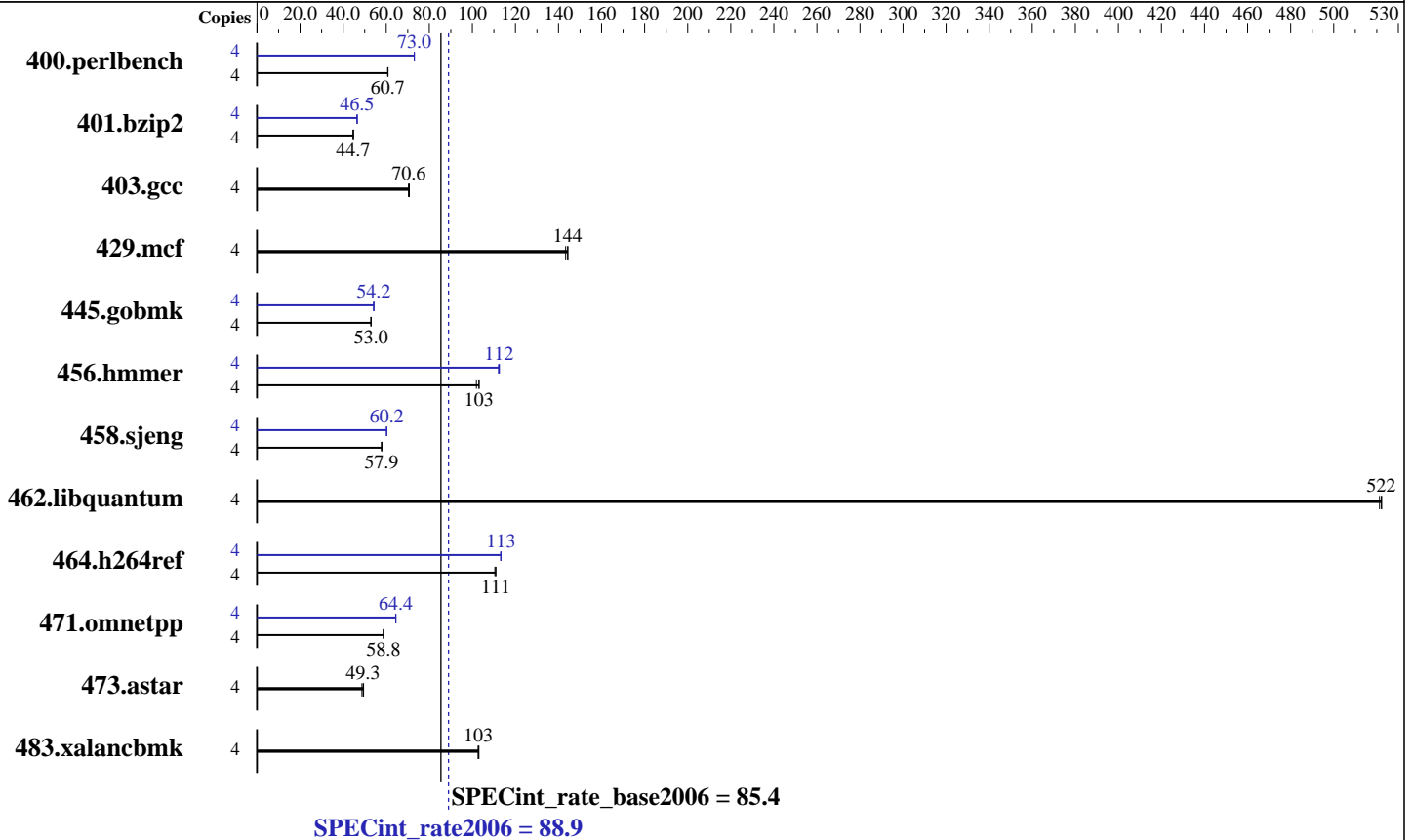
Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: May-2012

Tested by: NEC Corporation

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2403  
 CPU Characteristics: 1800  
 CPU MHz: 1800  
 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 = 88.9

Express5800/R120d-1E (Intel Xeon E5-2403)

SPECint\_rate\_base2006 = 85.4

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	642	60.8	<b>643</b>	<b>60.7</b>	644	60.7	4	535	73.1	<b>535</b>	<b>73.0</b>	535	73.0
401.bzip2	4	863	44.7	865	44.6	<b>863</b>	<b>44.7</b>	4	<b>831</b>	<b>46.5</b>	830	46.5	831	46.4
403.gcc	4	455	70.7	458	70.3	<b>456</b>	<b>70.6</b>	4	455	70.7	458	70.3	<b>456</b>	<b>70.6</b>
429.mcf	4	255	143	<b>253</b>	<b>144</b>	253	144	4	255	143	<b>253</b>	<b>144</b>	253	144
445.gobmk	4	<b>792</b>	<b>53.0</b>	792	53.0	793	52.9	4	774	54.2	774	54.2	<b>774</b>	<b>54.2</b>
456.hammer	4	362	103	<b>362</b>	<b>103</b>	366	102	4	<b>332</b>	<b>112</b>	333	112	332	113
458.sjeng	4	<b>836</b>	<b>57.9</b>	836	57.9	836	57.9	4	804	60.2	<b>804</b>	<b>60.2</b>	804	60.2
462.libquantum	4	<b>159</b>	<b>522</b>	159	521	159	522	4	<b>159</b>	<b>522</b>	159	521	159	522
464.h264ref	4	<b>798</b>	<b>111</b>	801	110	798	111	4	781	113	<b>781</b>	<b>113</b>	782	113
471.omnetpp	4	425	58.8	426	58.7	<b>425</b>	<b>58.8</b>	4	388	64.5	<b>388</b>	<b>64.4</b>	388	64.4
473.astar	4	568	49.5	576	48.7	<b>570</b>	<b>49.3</b>	4	568	49.5	576	48.7	<b>570</b>	<b>49.3</b>
483.xalancbmk	4	268	103	269	103	<b>269</b>	<b>103</b>	4	268	103	269	103	<b>269</b>	<b>103</b>

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 = 88.9

Express5800/R120d-1E (Intel Xeon E5-2403)

SPECint\_rate\_base2006 = 85.4

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 = 88.9

Express5800/R120d-1E (Intel Xeon E5-2403)

SPECint\_rate\_base2006 = 85.4

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 = 88.9

Express5800/R120d-1E (Intel Xeon E5-2403)

SPECint\_rate\_base2006 = 85.4

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 12:19:21 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 17 July 2012.