



# SPEC<sup>®</sup> CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

SPECint<sup>®</sup>\_rate2006 = 116

Express5800/R120d-2M (Intel Xeon E5-2609)

SPECint\_rate\_base2006 = 111

CPU2006 license: 9006

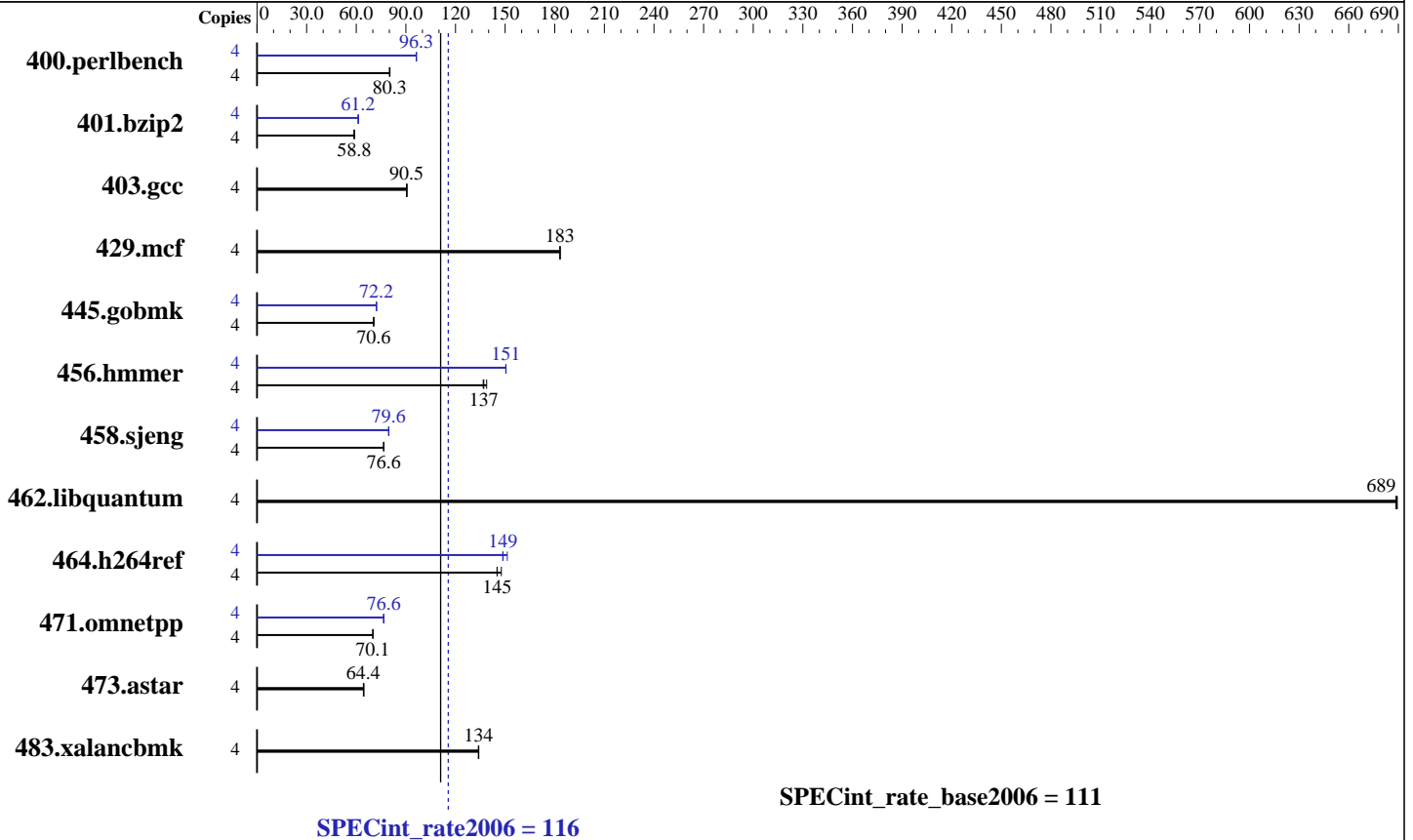
Test date: Apr-2012

Test sponsor: NEC Corporation

Hardware Availability: Apr-2012

Tested by: NEC Corporation

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2609  
 CPU Characteristics:  
 CPU MHz: 2400  
 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: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz and CL7)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 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 = 116

Express5800/R120d-2M (Intel Xeon E5-2609)

SPECint\_rate\_base2006 = 111

CPU2006 license: 9006

Test date: Apr-2012

Test sponsor: NEC Corporation

Hardware Availability: Apr-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	488	80.0	<b>487</b>	<b>80.3</b>	486	80.4	4	405	96.4	<b>406</b>	<b>96.3</b>	406	96.3
401.bzip2	4	655	59.0	658	58.6	<b>657</b>	<b>58.8</b>	4	<b>631</b>	<b>61.2</b>	632	61.1	629	61.3
403.gcc	4	355	90.7	356	90.4	<b>356</b>	<b>90.5</b>	4	355	90.7	356	90.4	<b>356</b>	<b>90.5</b>
429.mcf	4	199	183	199	183	<b>199</b>	<b>183</b>	4	199	183	199	183	<b>199</b>	<b>183</b>
445.gobmk	4	<b>595</b>	<b>70.6</b>	594	70.6	595	70.5	4	581	72.3	<b>581</b>	<b>72.2</b>	582	72.1
456.hammer	4	269	139	273	137	<b>272</b>	<b>137</b>	4	248	151	<b>248</b>	<b>151</b>	248	150
458.sjeng	4	632	76.6	<b>632</b>	<b>76.6</b>	632	76.6	4	607	79.7	608	79.6	<b>608</b>	<b>79.6</b>
462.libquantum	4	120	689	120	688	<b>120</b>	<b>689</b>	4	120	689	120	688	<b>120</b>	<b>689</b>
464.h264ref	4	610	145	599	148	<b>610</b>	<b>145</b>	4	585	151	596	149	<b>595</b>	<b>149</b>
471.omnetpp	4	357	70.0	357	70.1	<b>357</b>	<b>70.1</b>	4	<b>326</b>	<b>76.6</b>	326	76.6	327	76.6
473.astar	4	437	64.3	434	64.7	<b>436</b>	<b>64.4</b>	4	437	64.3	434	64.7	<b>436</b>	<b>64.4</b>
483.xalancbmk	4	206	134	206	134	<b>206</b>	<b>134</b>	4	206	134	206	134	<b>206</b>	<b>134</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

Default BIOS settings were used.  
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-1M and the Express5800/R120d-2M models are electronically equivalent. The results have been measured on the Express5800/R120d-1M 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 = 116

Express5800/R120d-2M (Intel Xeon E5-2609)

SPECint\_rate\_base2006 = 111

CPU2006 license: 9006

Test date: Apr-2012

Test sponsor: NEC Corporation

Hardware Availability: Apr-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 = 116

Express5800/R120d-2M (Intel Xeon E5-2609)

SPECint\_rate\_base2006 = 111

CPU2006 license: 9006

Test date: Apr-2012

Test sponsor: NEC Corporation

Hardware Availability: Apr-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 = 116

Express5800/R120d-2M (Intel Xeon E5-2609)

SPECint\_rate\_base2006 = 111

CPU2006 license: 9006

Test date: Apr-2012

Test sponsor: NEC Corporation

Hardware Availability: Apr-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-linux64.20111122.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-linux64.20111122.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 05:57:46 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 5 June 2012.