



SPEC® CINT2006 Result

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NEC Corporation

SPECint®_rate2006 = 275

Express5800/R120f-1M (Intel Xeon E5-2603 v3)

SPECint_rate_base2006 = 265

CPU2006 license: 9006

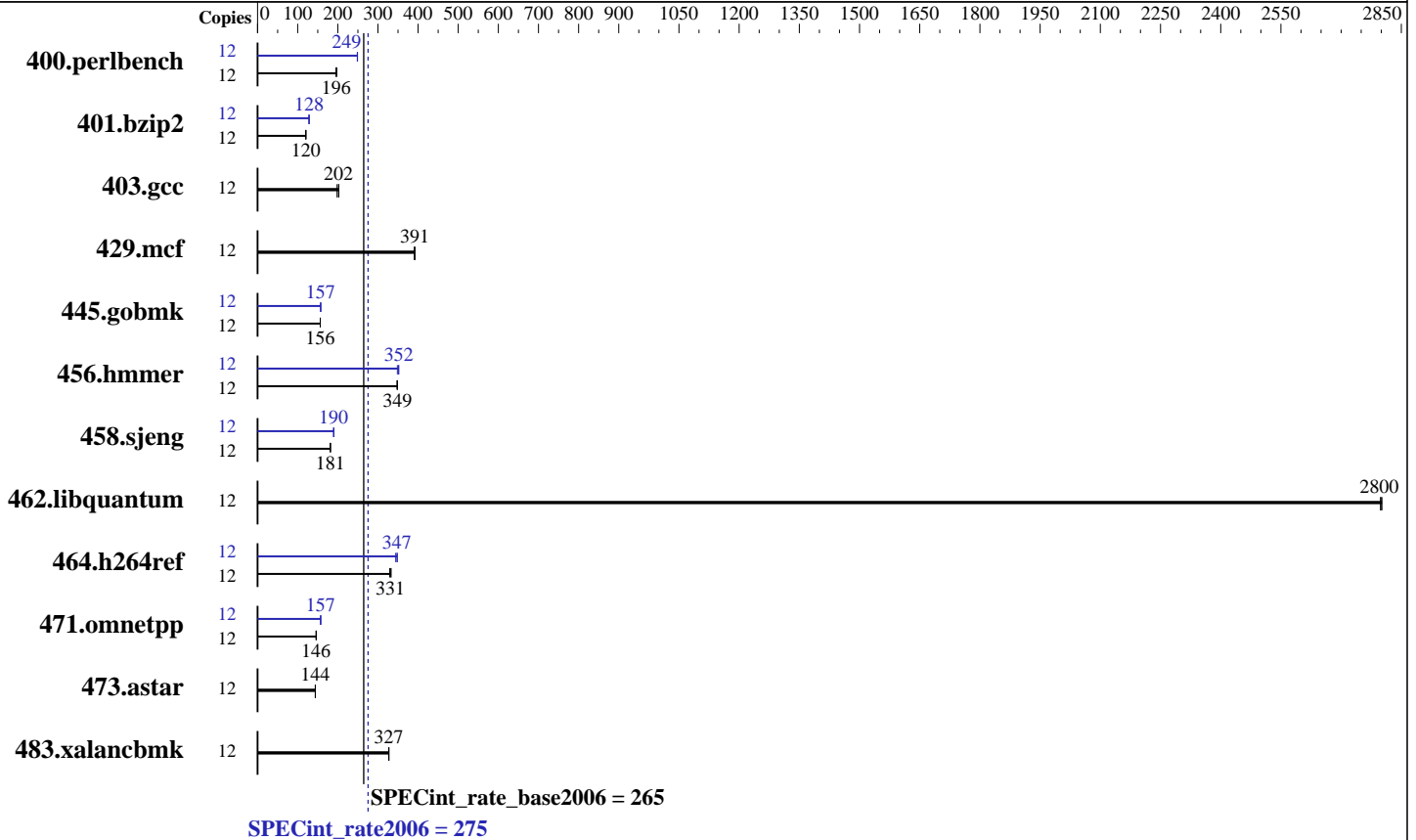
Test date: Feb-2015

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: May-2014



Hardware

CPU Name: Intel Xeon E5-2603 v3
 CPU Characteristics:
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 Kernel 2.6.32-431.17.1.el6.x86_64
 Compiler: C/C++: Version 14.0.2.144 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



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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	12	594	197	<u>599</u>	<u>196</u>	600	196	12	<u>471</u>	<u>249</u>	472	249	471	249
401.bzip2	12	964	120	<u>962</u>	<u>120</u>	962	120	12	901	129	903	128	<u>903</u>	<u>128</u>
403.gcc	12	478	202	<u>478</u>	<u>202</u>	488	198	12	478	202	<u>478</u>	<u>202</u>	488	198
429.mcf	12	279	392	<u>280</u>	<u>391</u>	280	391	12	279	392	<u>280</u>	<u>391</u>	280	391
445.gobmk	12	805	156	<u>806</u>	<u>156</u>	806	156	12	800	157	<u>800</u>	<u>157</u>	801	157
456.hammer	12	<u>321</u>	<u>349</u>	322	347	321	349	12	<u>318</u>	<u>352</u>	321	348	318	352
458.sjeng	12	800	182	801	181	<u>800</u>	<u>181</u>	12	765	190	765	190	<u>765</u>	<u>190</u>
462.libquantum	12	<u>88.8</u>	<u>2800</u>	88.9	2800	88.7	2800	12	<u>88.8</u>	<u>2800</u>	88.9	2800	88.7	2800
464.h264ref	12	798	333	<u>802</u>	<u>331</u>	807	329	12	<u>765</u>	<u>347</u>	763	348	772	344
471.omnetpp	12	512	147	<u>514</u>	<u>146</u>	514	146	12	476	157	<u>477</u>	<u>157</u>	478	157
473.astar	12	585	144	585	144	<u>585</u>	<u>144</u>	12	585	144	585	144	<u>585</u>	<u>144</u>
483.xalancbmk	12	<u>253</u>	<u>327</u>	253	327	253	327	12	<u>253</u>	<u>327</u>	253	327	253	327

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:
Power Management Policy: Custom
Energy Performance: Performance
Patrol Scrub: Disabled

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

The Express5800/R120f-1M (Intel Xeon E5-2603 v3) and the Express5800/R120f-2M (Intel Xeon E5-2603 v3) models are electronically equivalent. The results have been measured on the Express5800/R120f-2M (Intel Xeon E5-2603 v3) model.

Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

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General Notes (Continued)

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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmarheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

400.perlbench: icc -m64

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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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
`-ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

458.sjeng: `-xCORE-AVX2(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`

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Peak Optimization Flags (Continued)

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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/sh -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-ic14.0-official-linux64.20140128.html>
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.xml>

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For other inquiries, please contact webmaster@spec.org.

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