



SPEC® CINT2006 Result

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NEC Corporation

SPECint®_rate2006 = 918

Express5800/A1080a-D (Intel Xeon E7-8850)

SPECint_rate_base2006 = 867

CPU2006 license: 9006

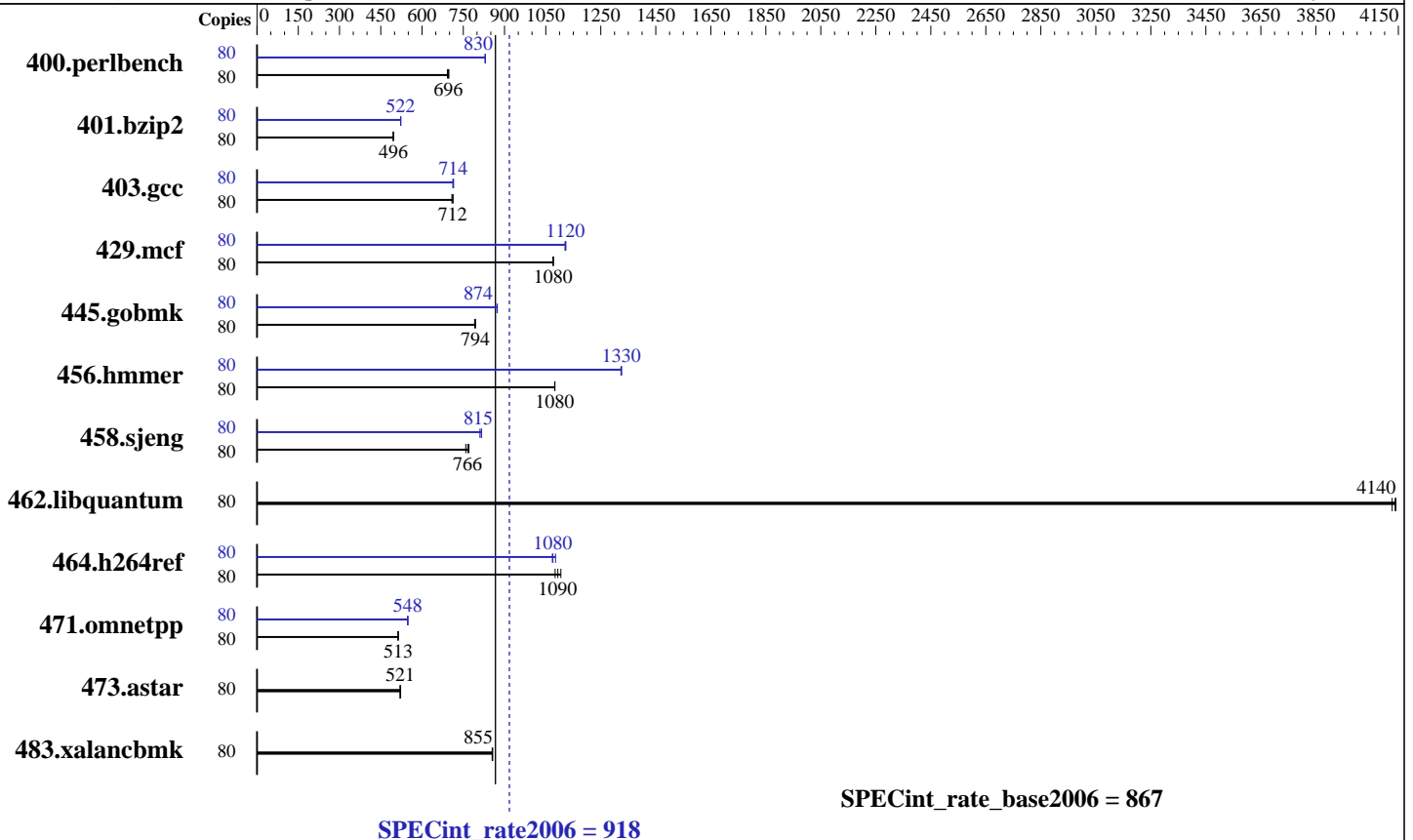
Test date: Aug-2011

Test sponsor: NEC Corporation

Hardware Availability: Nov-2011

Tested by: NEC Corporation

Software Availability: May-2011



Hardware

CPU Name: Intel Xeon E7-8850
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2,3,4 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: 24 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (64 x 4 GB 2Rx4 PC3-8500R-7, ECC)
 Disk Subsystem: 2x300 GB SAS, 10000 RPM, RAID 0
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.1, Kernel 2.6.32-131.0.15.el6.x86_64 on an x86_64
 Compiler: C/C++: Version 12.0.4.191 of Intel Compiler XE for applications on IA-32 Build 20110427
 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 V9.01



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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	80	1121	697	<u>1123</u>	<u>696</u>	1129	692	80	943	829	941	830	<u>942</u>	<u>830</u>
401.bzip2	80	1559	495	1556	496	<u>1557</u>	<u>496</u>	80	1477	523	1478	522	<u>1478</u>	<u>522</u>
403.gcc	80	909	709	<u>905</u>	<u>712</u>	903	713	80	901	715	<u>902</u>	<u>714</u>	905	712
429.mcf	80	677	1080	<u>677</u>	<u>1080</u>	678	1080	80	650	1120	652	1120	<u>650</u>	<u>1120</u>
445.gobmk	80	1057	794	<u>1057</u>	<u>794</u>	1060	791	80	962	873	<u>961</u>	<u>874</u>	961	874
456.hammer	80	689	1080	<u>689</u>	<u>1080</u>	690	1080	80	<u>563</u>	<u>1330</u>	564	1320	563	1330
458.sjeng	80	1275	759	1256	771	<u>1264</u>	<u>766</u>	80	1194	810	1185	817	<u>1188</u>	<u>815</u>
462.libquantum	80	<u>401</u>	<u>4140</u>	402	4130	400	4140	80	<u>401</u>	<u>4140</u>	402	4130	400	4140
464.h264ref	80	<u>1619</u>	<u>1090</u>	1633	1080	1602	1100	80	<u>1645</u>	<u>1080</u>	1649	1070	1631	1090
471.omnetpp	80	<u>974</u>	<u>513</u>	974	514	975	513	80	913	548	<u>912</u>	<u>548</u>	911	549
473.astar	80	<u>1079</u>	<u>521</u>	1080	520	1075	522	80	<u>1079</u>	<u>521</u>	1080	520	1075	522
483.xalancbmk	80	644	857	645	855	<u>645</u>	<u>855</u>	80	644	857	645	855	<u>645</u>	<u>855</u>

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

Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
echo 1 > /proc/sys/vm/zone_reclaim_mode
Huge pages were not configured for this run

Platform Notes

Patrol Scrubbing set to disabled in Maintenance Console

General Notes

The Express5800/A1080a-S and the Express5800/A1080a-D models are electronically equivalent.
The results have been measured on the Express5800/A1080a-S model.
Binaries were compiled on RHEL 5.6

Base Compiler Invocation

C benchmarks:
icc -m32

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Base Compiler Invocation (Continued)

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
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_9/lib -lsmartheap
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32



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Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
 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) -static(pass 2)
 -prof-use(pass 2) -ansi-alias

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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div
 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

429.mcf: -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 -auto-ilp32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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
 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

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_9/lib -lsmartheap

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Peak Optimization Flags (Continued)

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-ic12.0-linux64-revB.20110705.html>

<http://www.spec.org/cpu2006/flags/NEC-platform-linux64-revB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110705.xml>

<http://www.spec.org/cpu2006/flags/NEC-platform-linux64-revB.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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