SPEC® CINT2006 Result

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NEC Corporation

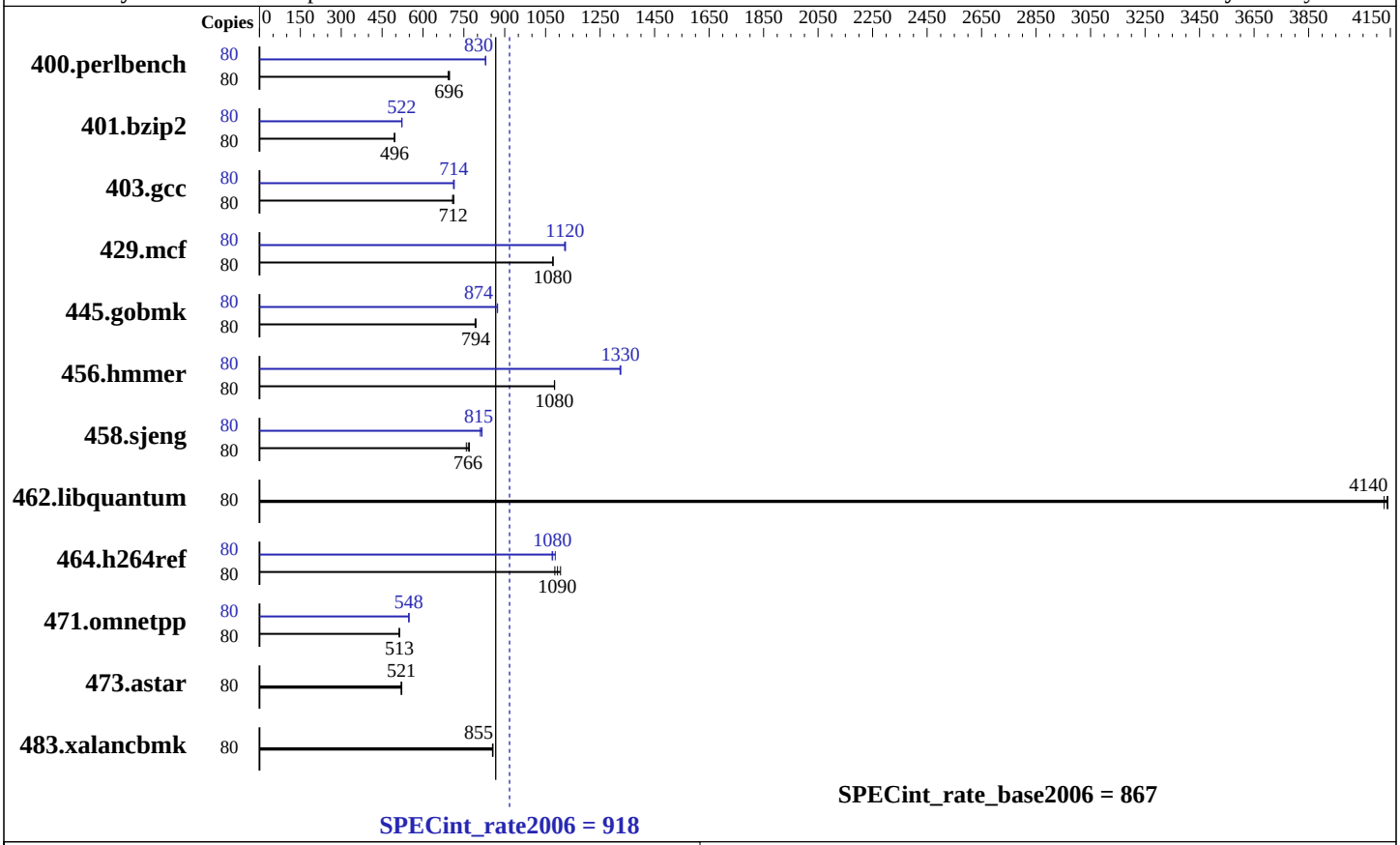
Express5800/A1080a-S (Intel Xeon E7-8850)

SPECint®_rate2006 = 918

SPECint_rate_base2006 = 867

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Aug-2011
Hardware Availability: Nov-2011
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	**1123**	**696**	1129	692	80	943	829	941	830	**942**	**830**
401.bzip2	80	1559	495	1556	496	**1557**	**496**	80	1477	523	1478	522	**1478**	**522**
403.gcc	80	909	709	**905**	**712**	903	713	80	901	715	**902**	**714**	905	712
429.mcf	80	677	1080	**677**	**1080**	678	1080	80	650	1120	652	1120	**650**	**1120**
445.gobmk	80	1057	794	**1057**	**794**	1060	791	80	962	873	**961**	**874**	961	874
456.hmmer	80	689	1080	**689**	**1080**	690	1080	80	**563**	**1330**	564	1320	563	1330
458.sjeng	80	1275	759	1256	771	**1264**	**766**	80	1194	810	1185	817	**1188**	**815**
462.libquantum	80	**401**	**4140**	402	4130	400	4140	80	**401**	**4140**	402	4130	400	4140
464.h264ref	80	**1619**	**1090**	1633	1080	1602	1100	80	**1645**	**1080**	1649	1070	1631	1090
471.omnetpp	80	**974**	**513**	974	514	975	513	80	913	548	**912**	**548**	911	549
473.astar	80	**1079**	**521**	1080	520	1075	522	80	**1079**	**521**	1080	520	1075	522
483.xalancbmk	80	644	857	645	855	**645**	**855**	80	644	857	645	855	**645**	**855**

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
```

Continued on next page

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

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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