SPEC® CINT2006 Result

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NEC Corporation

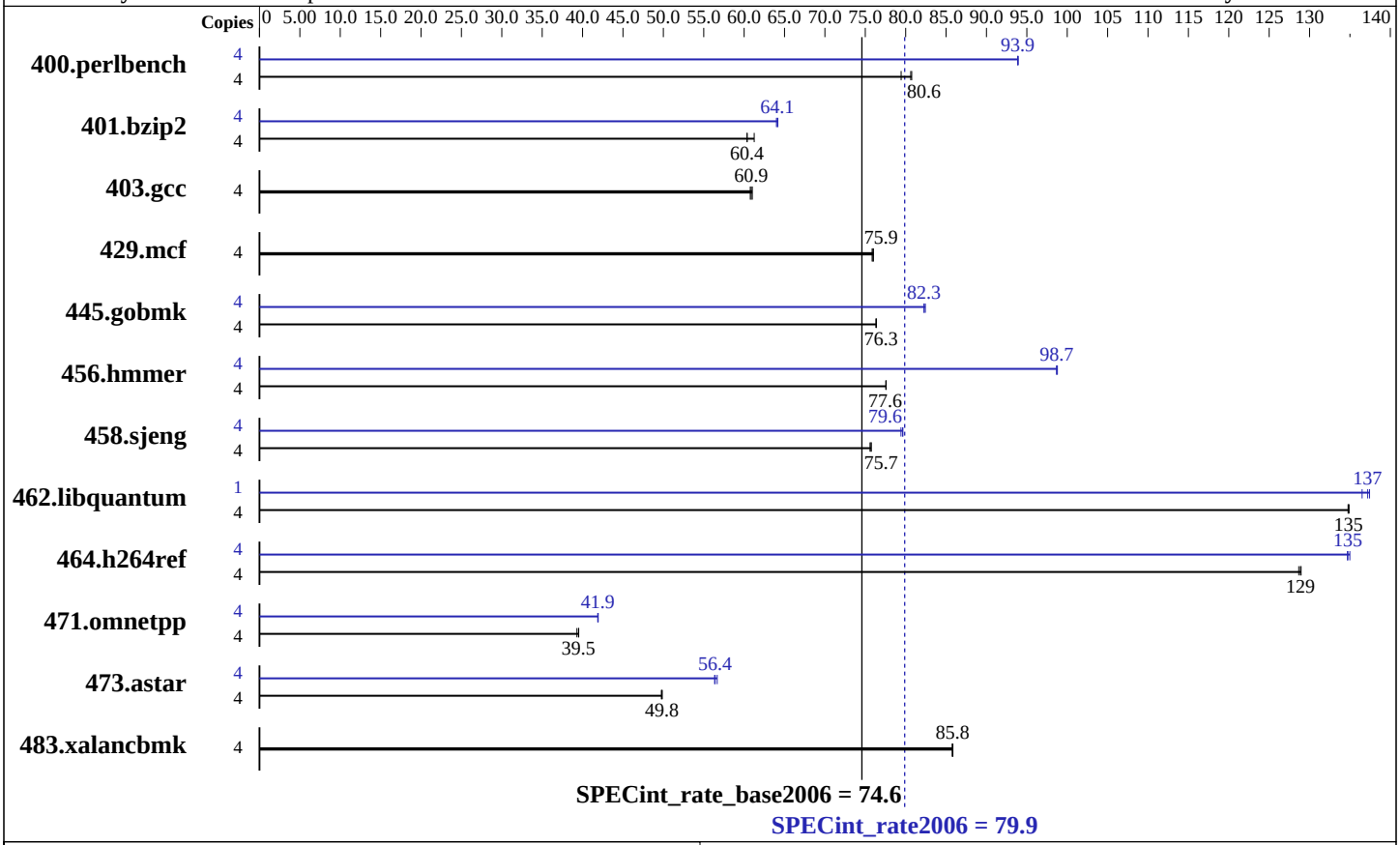
Express5800/B140a-T
(Intel Xeon E7220)

SPECint®_rate2006 = 79.9

SPECint_rate_base2006 = 74.6

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

Test date: Mar-2009
Hardware Availability: Feb-2009
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon E7220
CPU Characteristics:	1066 MHz system bus
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2,3,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	32 GB (16x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x146.5 GB SAS, 10000 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502

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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	4	**485**	**80.6**	484	80.7	492	79.4	4	416	93.9	416	93.9	**416**	**93.9**
401.bzip2	4	630	61.2	**639**	**60.4**	639	60.4	4	603	64.0	601	64.2	**602**	**64.1**
403.gcc	4	530	60.8	528	61.0	**529**	**60.9**	4	530	60.8	528	61.0	**529**	**60.9**
429.mcf	4	481	75.8	**480**	**75.9**	480	76.0	4	481	75.8	**480**	**75.9**	480	76.0
445.gobmk	4	**550**	**76.3**	550	76.4	550	76.3	4	509	82.4	**510**	**82.3**	510	82.3
456.hmmer	4	481	77.5	**481**	**77.6**	481	77.6	4	**378**	**98.7**	378	98.8	378	98.7
458.sjeng	4	640	75.6	**639**	**75.7**	639	75.7	4	609	79.4	**608**	**79.6**	608	79.6
462.libquantum	4	**615**	**135**	614	135	615	135	1	**151**	**137**	152	137	151	137
464.h264ref	4	686	129	**687**	**129**	688	129	4	**657**	**135**	656	135	657	135
471.omnetpp	4	636	39.3	**633**	**39.5**	633	39.5	4	**597**	**41.9**	597	41.9	596	41.9
473.astar	4	564	49.8	**564**	**49.8**	563	49.9	4	**498**	**56.4**	498	56.3	496	56.7
483.xalancbmk	4	322	85.8	**322**	**85.8**	322	85.8	4	322	85.8	**322**	**85.8**	322	85.8

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.
 taskset was used to bind processes to cores except
 for 462.libquantum peak
```

Operating System Notes

```
 'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to "physical,0"
 KMP_STACKSIZE set to 64M
```

Platform Notes

```
Bios settings:
Hardware Prefetcher:              Enabled
Adjacent Cache Line Prefetch:    Disabled
FSB High Bandwidth Optimization: Disabled
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSSE3 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSSE3 -ipo -O3 -no-prec-div -opt-prefetch -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

401.bzip2: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

Continued on next page

Peak Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll4

462.libquantum: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -parallel -par-runtime-control -opt-prefetch

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

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-ic11.0-int-linux64-revE.html`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revE.xml`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-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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