SPEC® CINT2006 Result

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NEC Corporation

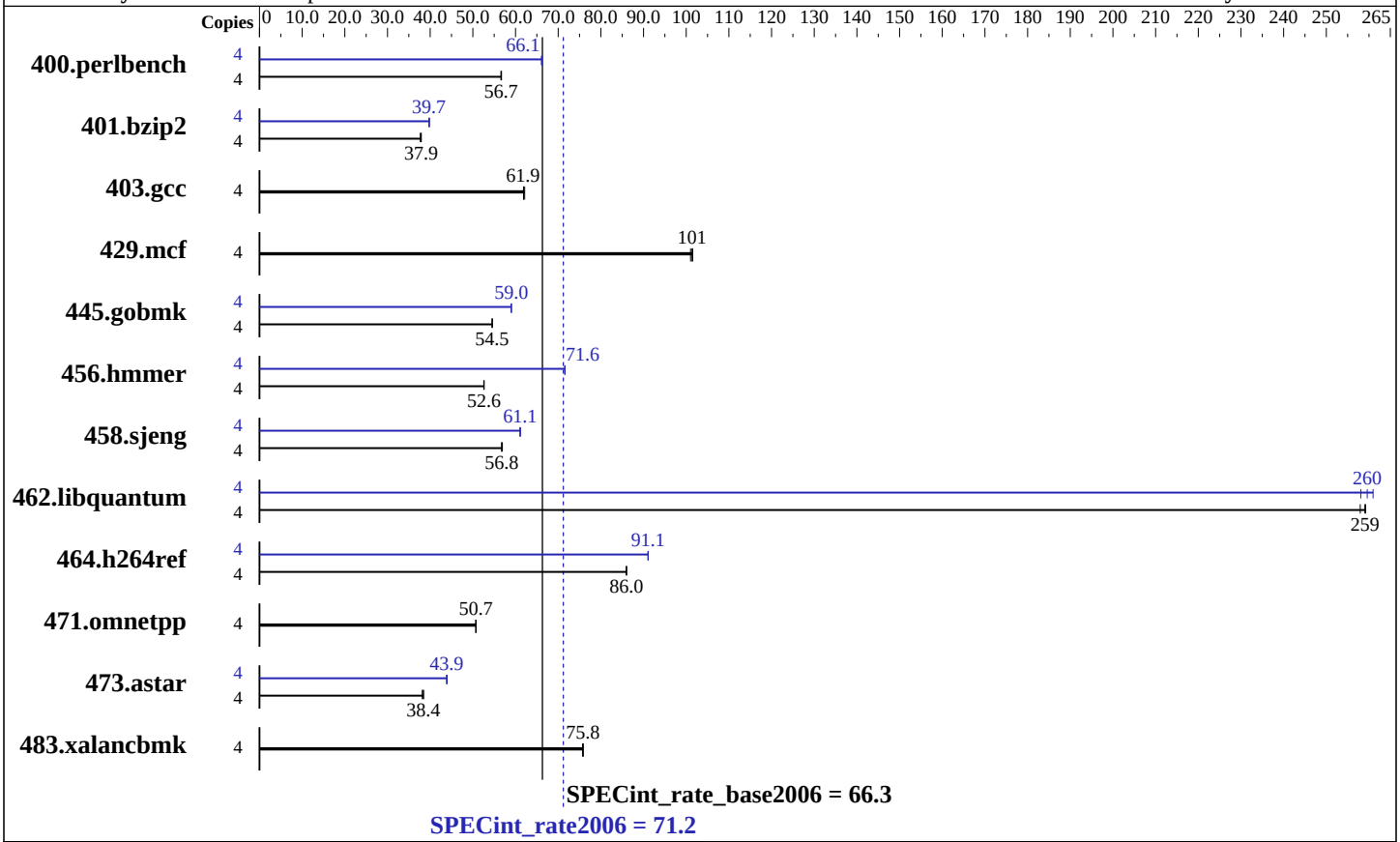
Express5800/T120a-M
(Intel Xeon E5502)

SPECint®_rate2006 = 71.2

SPECint_rate_base2006 = 66.3

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

Test date: Apr-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009



Hardware

CPU Name:	Intel Xeon E5502
CPU Characteristics:	
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 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:	4 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 X 4 GB PC3-8500R, 2 rank, CL7, ECC)
Disk Subsystem:	1x73.2 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081
Auto Parallel:	No
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	689	56.7	**690**	**56.7**	691	56.6	4	**591**	**66.1**	591	66.2	591	66.1
401.bzip2	4	**1019**	**37.9**	1025	37.7	1018	37.9	4	972	39.7	969	39.9	**972**	**39.7**
403.gcc	4	**520**	**61.9**	518	62.1	520	61.9	4	**520**	**61.9**	518	62.1	520	61.9
429.mcf	4	**360**	**101**	359	102	361	101	4	**360**	**101**	359	102	361	101
445.gobmk	4	769	54.5	769	54.5	**769**	**54.5**	4	**711**	**59.0**	711	59.0	711	59.0
456.hmmer	4	709	52.7	710	52.6	**710**	**52.6**	4	522	71.6	**521**	**71.6**	521	71.6
458.sjeng	4	**852**	**56.8**	853	56.7	850	56.9	4	**792**	**61.1**	793	61.0	791	61.2
462.libquantum	4	321	258	320	259	**320**	**259**	4	318	261	321	258	**319**	**260**
464.h264ref	4	1030	86.0	**1030**	**86.0**	1029	86.0	4	**972**	**91.1**	972	91.1	972	91.1
471.omnetpp	4	493	50.7	**493**	**50.7**	493	50.7	4	493	50.7	**493**	**50.7**	493	50.7
473.astar	4	**731**	**38.4**	730	38.4	736	38.1	4	**640**	**43.9**	639	44.0	640	43.9
483.xalancbmk	4	**364**	**75.8**	364	75.9	365	75.7	4	**364**	**75.8**	364	75.9	365	75.7

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 stacksize to unlimited prior to run
```

Platform Notes

```
BIOS setting:
NUMA configuration: Enabled
```

General Notes

```
The NEC Express5800/T120a-M(Intel Xeon E5502) and
the Bull NovaScale T860 E2 (Intel Xeon E5502, 1.86 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/T120a-M(Intel Xeon E5502) model.
```

Base Compiler Invocation

C benchmarks:

```
icc
```

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Base Compiler Invocation (Continued)

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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.2 -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/11.0/081/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/081/bin/intel64/icc

C++ benchmarks (except as noted below):
icpc

473.astar: /opt/intel/Compiler/11.0/081/bin/intel64/icpc

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
473.astar: -DSPEC_CPU_LP64
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 -opt-prefetch

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: basepeak = yes

429.mcf: basepeak = yes

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 -static -unroll2
-ansi-alias -auto-ilp32

458.sjeng: -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) -unroll4 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static
-opt-malloc-options=3 -opt-prefetch

464.h264ref: -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) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -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=routine -auto-ilp32
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib64 -lsmartheap64

Continued on next page

Peak Optimization Flags (Continued)

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-revF.html`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revD.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-revF.xml`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revD.xml`

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

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