SPEC® CINT2006 Result

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NEC Corporation

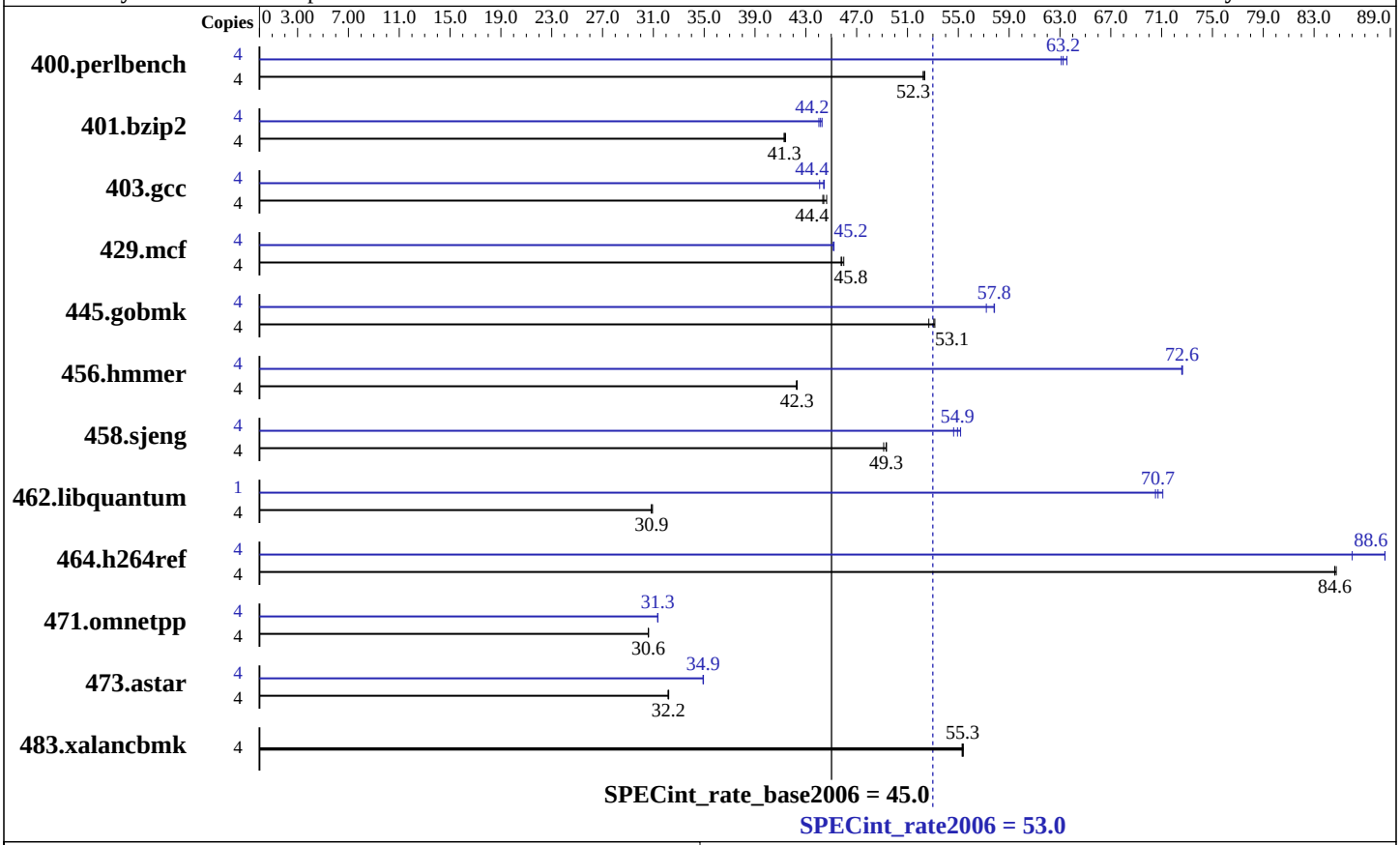
Express5800/120Bb-6
(Intel Xeon E5405)

SPECint®_rate2006 = 53.0

SPECint_rate_base2006 = 45.0

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

Test date: May-2008
Hardware Availability: Feb-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5405
CPU Characteristics:	2.00 GHz, 2x6 MB L2 shared, 1333 MHz bus
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73.2 GB SAS, 15000RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008
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-2.17.tar.gz, Version 2.17

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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	746	52.4	748	52.2	**747**	**52.3**	4	619	63.1	615	63.5	**618**	**63.2**
401.bzip2	4	935	41.3	**934**	**41.3**	932	41.4	4	877	44.0	**874**	**44.2**	872	44.3
403.gcc	4	721	44.6	**725**	**44.4**	726	44.3	4	724	44.5	730	44.1	**725**	**44.4**
429.mcf	4	793	46.0	**796**	**45.8**	797	45.8	4	**807**	**45.2**	807	45.2	808	45.2
445.gobmk	4	**791**	**53.1**	797	52.7	789	53.2	4	725	57.8	734	57.2	**726**	**57.8**
456.hmmer	4	882	42.3	883	42.3	**882**	**42.3**	4	514	72.6	**514**	**72.6**	514	72.6
458.sjeng	4	**981**	**49.3**	981	49.3	985	49.1	4	**881**	**54.9**	877	55.2	886	54.6
462.libquantum	4	**2686**	**30.9**	2687	30.8	2679	30.9	1	294	70.5	**293**	**70.7**	291	71.1
464.h264ref	4	1046	84.6	**1046**	**84.6**	1045	84.7	4	999	88.6	1029	86.0	**999**	**88.6**
471.omnetpp	4	817	30.6	**817**	**30.6**	816	30.6	4	**797**	**31.3**	797	31.4	798	31.3
473.astar	4	**872**	**32.2**	872	32.2	873	32.2	4	804	34.9	**804**	**34.9**	804	34.9
483.xalancbmk	4	499	55.3	**499**	**55.3**	498	55.4	4	499	55.3	**499**	**55.3**	498	55.4

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

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
```

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2,
456.hmmer, for peak, are compiled in 64-bit mode
```

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:
`-fast -inline-calloc -opt-malloc-options=3`

C++ benchmarks:
`-xT -ipo -O3 -no-prec-div -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/cce/10.1.008/bin/icc`
`-L/opt/intel/cce/10.1.008/lib`
`-I/opt/intel/cce/10.1.008/include`

456.hmmer: `/opt/intel/cce/10.1.008/bin/icc`
`-L/opt/intel/cce/10.1.008/lib`
`-I/opt/intel/cce/10.1.008/include`

C++ benchmarks:
`icpc`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -ansi-alias -prefetch`

401.bzip2: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch`

403.gcc: `-fast -inline-calloc -opt-malloc-options=3`

429.mcf: `-fast -prefetch`

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

456.hmmer: `-fast -unroll2 -ansi-alias -opt-multi-version-aggressive`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4`

462.libquantum: `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control`

464.h264ref: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -O3 -ipo -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) `-xT -O3 -ipo -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 file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.xml`

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