SPEC® CINT2006 Result

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NEC Corporation

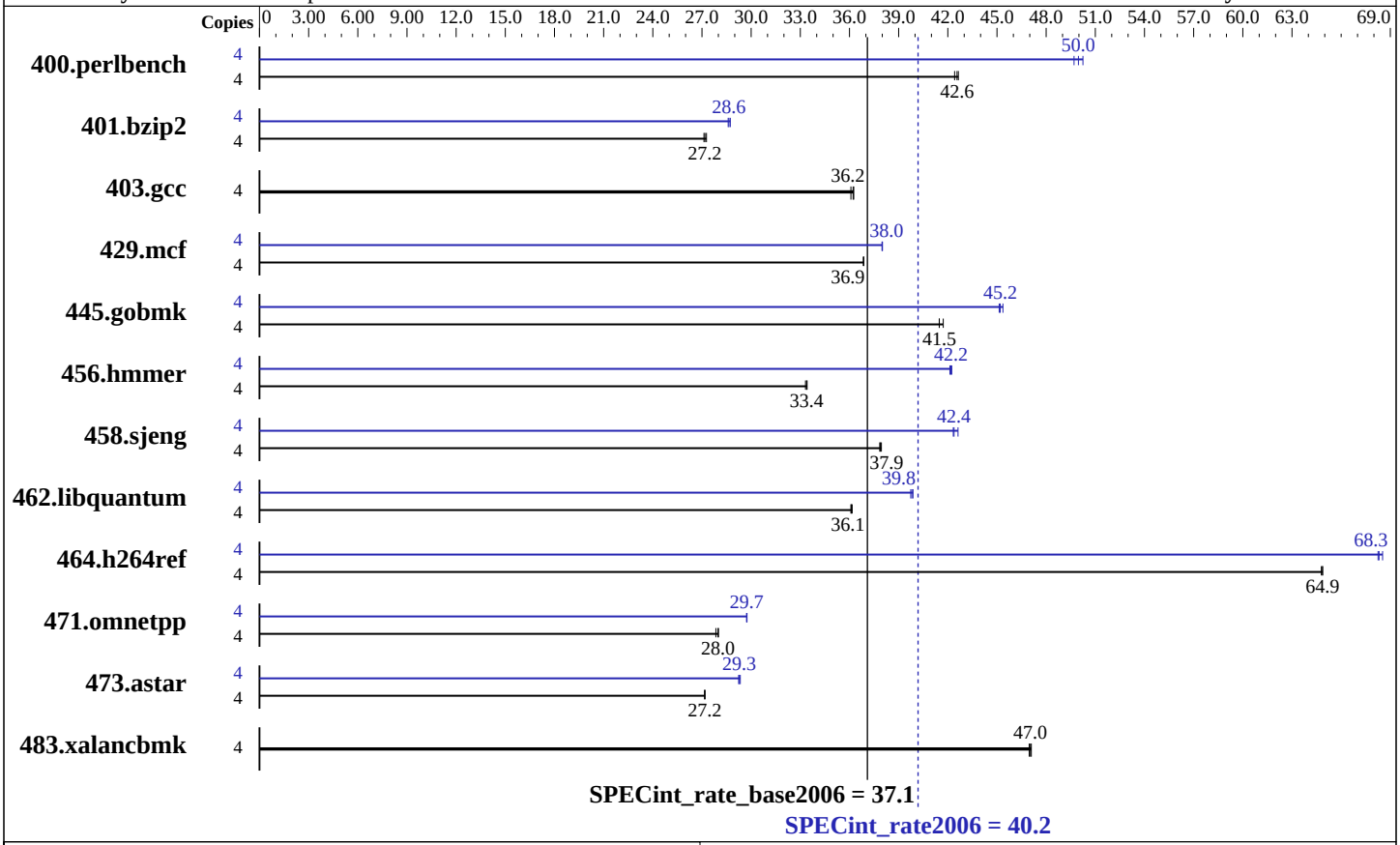
Express5800/120Rg-1
(Intel Xeon Prosessor 5110)

SPECint®_rate2006 = 40.2

SPECint_rate_base2006 = 37.1

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

Test date: Jun-2007
Hardware Availability: May-2007
Software Availability: Jun-2007



Hardware

CPU Name:	Intel Xeon 5110
CPU Characteristics:	1.60 GHz, 4MB L2, 1066MHz bus
CPU MHz:	1600
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:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (8x1 GB DDR2 5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73.2 GB SAS, 15000RPM
Other Hardware:	None

Software

Operating System:	64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp for x86_64
Compiler:	Intel C++ Compiler for IA32/EM64T application, Version 10.0 - Build 20070426 Package ID: l_cc_p_10.0.023
Auto Parallel:	No
File System:	ext2
System State:	Multiuser, Runlevel 3
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	916	42.6	921	42.4	**918**	**42.6**	4	**782**	**50.0**	778	50.2	786	49.7
401.bzip2	4	1423	27.1	**1420**	**27.2**	1415	27.3	4	1350	28.6	**1347**	**28.6**	1344	28.7
403.gcc	4	892	36.1	888	36.3	**889**	**36.2**	4	892	36.1	888	36.3	**889**	**36.2**
429.mcf	4	990	36.9	989	36.9	**990**	**36.9**	4	**960**	**38.0**	960	38.0	960	38.0
445.gobmk	4	1006	41.7	1012	41.5	**1012**	**41.5**	4	925	45.4	**928**	**45.2**	930	45.1
456.hmmer	4	1120	33.3	**1118**	**33.4**	1117	33.4	4	884	42.2	886	42.1	**885**	**42.2**
458.sjeng	4	1279	37.8	1275	37.9	**1278**	**37.9**	4	1136	42.6	**1142**	**42.4**	1143	42.3
462.libquantum	4	**2295**	**36.1**	2292	36.2	2297	36.1	4	2086	39.7	**2082**	**39.8**	2078	39.9
464.h264ref	4	1365	64.9	1366	64.8	**1365**	**64.9**	4	1292	68.5	1297	68.3	**1296**	**68.3**
471.omnetpp	4	**894**	**28.0**	893	28.0	898	27.8	4	841	29.7	840	29.7	**841**	**29.7**
473.astar	4	**1034**	**27.2**	1034	27.2	1033	27.2	4	957	29.3	**959**	**29.3**	960	29.2
483.xalancbmk	4	586	47.1	**587**	**47.0**	588	47.0	4	586	47.1	**587**	**47.0**	588	47.0

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
'/usr/bin/taskset' used to bind processes to CPUs
```

General Notes

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

 The Express5800/120Rg-1(Intel Xeon Prosessor 5110) and
 the Express5800/120Ri-2(Intel Xeon Prosessor 5110) models are electronically equivalent.
 The results have been measured on a Express5800/120Ri-2(Intel Xeon Prosessor 5110) model.
```

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

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/10.0.023/bin/icc

456.hmmer: /opt/intel/cce/10.0.023/bin/icc

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:

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

401.bzip2: `-L/opt/intel/cce/10.0.023/lib -I/opt/intel/cce/10.0.023/include -prof-gen`(pass 1) `-prof-use`(pass 2) `-fast`

403.gcc: `basepeak = yes`

429.mcf: `-fast -prefetch`

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

456.hmmer: `-L/opt/intel/cce/10.0.023/lib -I/opt/intel/cce/10.0.023/include -prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

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

462.libquantum: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always`

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 -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap`

473.astar: `Same as 471.omnetpp`

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-ic10-linux-flags.html`

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

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