SPEC® CINT2006 Result

NEC Corporation

Express5800/110Ri-1
(Intel Pentium Dual-Core E2160)

SPECint®2006 = 13.4

SPECint_base2006 = 12.0

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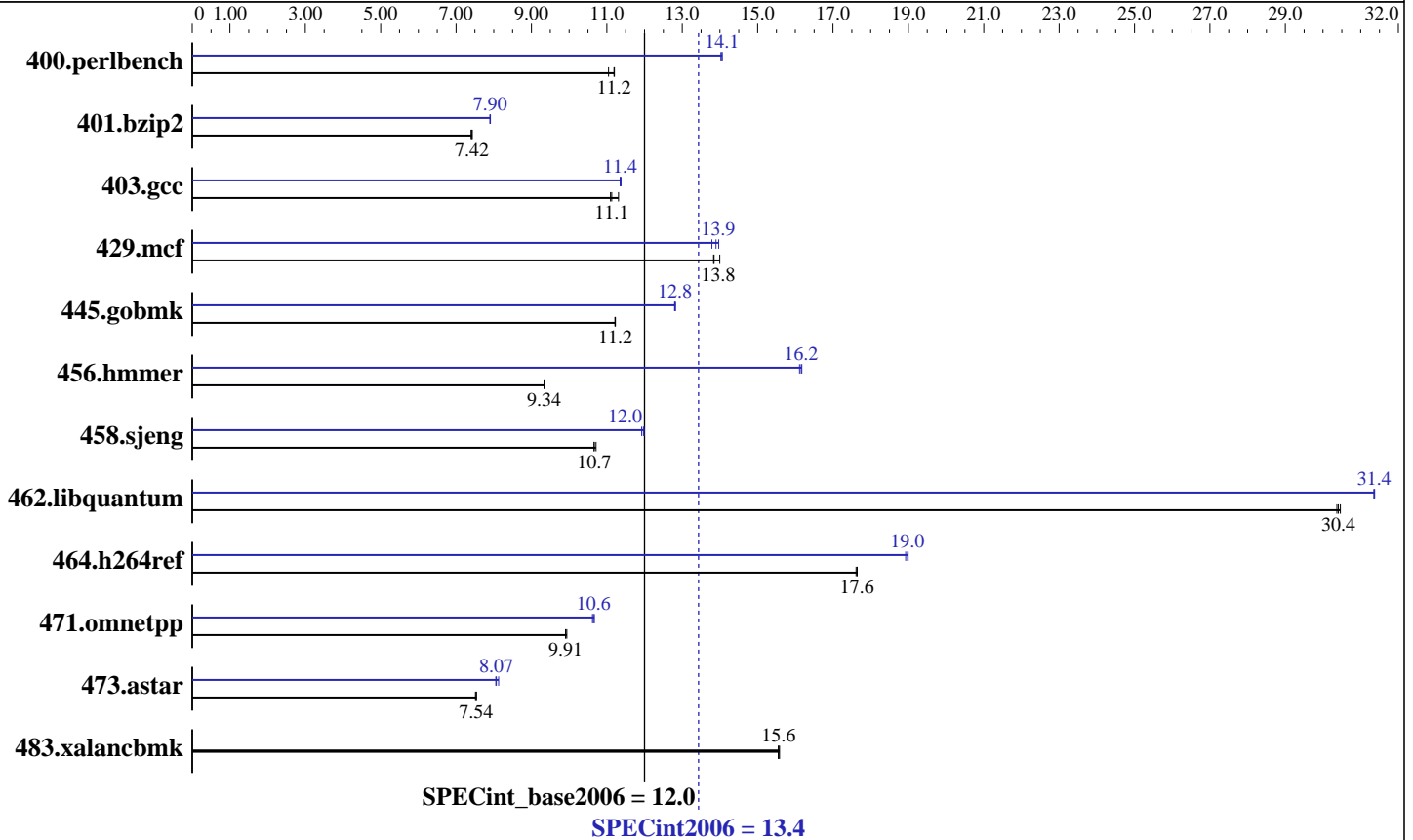**Test sponsor:** NEC Corporation
Tested by: NEC Corporation

Test date: Jun-2008
Hardware Availability: Apr-2008
Software Availability: Nov-2007

Benchmark	base	peak
400.perlbench	11.2	14.1
401.bzip2	7.42	7.90
403.gcc	11.1	11.4
429.mcf	13.8	13.9
445.gobmk	11.2	12.8
456.hmmer	9.34	16.2
458.sjeng	10.7	12.0
462.libquantum	30.4	31.4
464.h264ref	17.6	19.0
471.omnetpp	9.91	10.6
473.astar	7.54	8.07
483.xalancbmk	15.6	

SPECint_base2006 = 12.0
SPECint2006 = 13.4

Hardware

CPU Name: Intel Pentium Dual-Core E2160
CPU Characteristics: 1.80 GHz, 1 MB L2, 800 MHz bus
CPU MHz: 1800
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
CPU(s) orderable: 1 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per chip
L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-6400E, 2 rank, CL6-6-6, ECC)
Disk Subsystem: 1x80.0 GB SATAII, 7200RPM
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**873**	**11.2**	885	11.0	872	11.2	695	14.1	**695**	**14.1**	697	14.0
401.bzip2	1305	7.40	**1300**	**7.42**	1299	7.43	**1221**	**7.90**	1220	7.91	1221	7.90
403.gcc	712	11.3	725	11.1	**723**	**11.1**	708	11.4	**709**	**11.4**	709	11.4
429.mcf	**659**	**13.8**	652	14.0	659	13.8	661	13.8	**656**	**13.9**	653	14.0
445.gobmk	935	11.2	**935**	**11.2**	934	11.2	**819**	**12.8**	820	12.8	818	12.8
456.hmmer	998	9.35	999	9.33	**999**	**9.34**	577	16.2	579	16.1	**578**	**16.2**
458.sjeng	**1135**	**10.7**	1135	10.7	1129	10.7	1009	12.0	1015	11.9	**1011**	**12.0**
462.libquantum	680	30.5	**681**	**30.4**	682	30.4	660	31.4	**661**	**31.4**	661	31.4
464.h264ref	**1255**	**17.6**	1257	17.6	1255	17.6	**1166**	**19.0**	1165	19.0	1169	18.9
471.omnetpp	629	9.94	**631**	**9.91**	631	9.91	**587**	**10.6**	589	10.6	586	10.7
473.astar	**932**	**7.54**	934	7.51	931	7.54	**870**	**8.07**	864	8.13	872	8.05
483.xalancbmk	**443**	**15.6**	444	15.5	443	15.6	**443**	**15.6**	444	15.5	443	15.6

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
```

Platform Notes

```
Bios settings:
Hardware Prefetcher:        Enabled
Adjacent Cache Line Prefetch: Enabled
Intel SpeedStep Technology:  Disabled
```

General Notes

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

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

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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 -vec-guard-write -parallel -par-runtime-control
```

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
```

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Peak Portability Flags (Continued)

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: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch`
`-auto-ilp32`

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`
`-auto-ilp32`

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`

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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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