SPEC® CINT2006 Result

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NEC Corporation

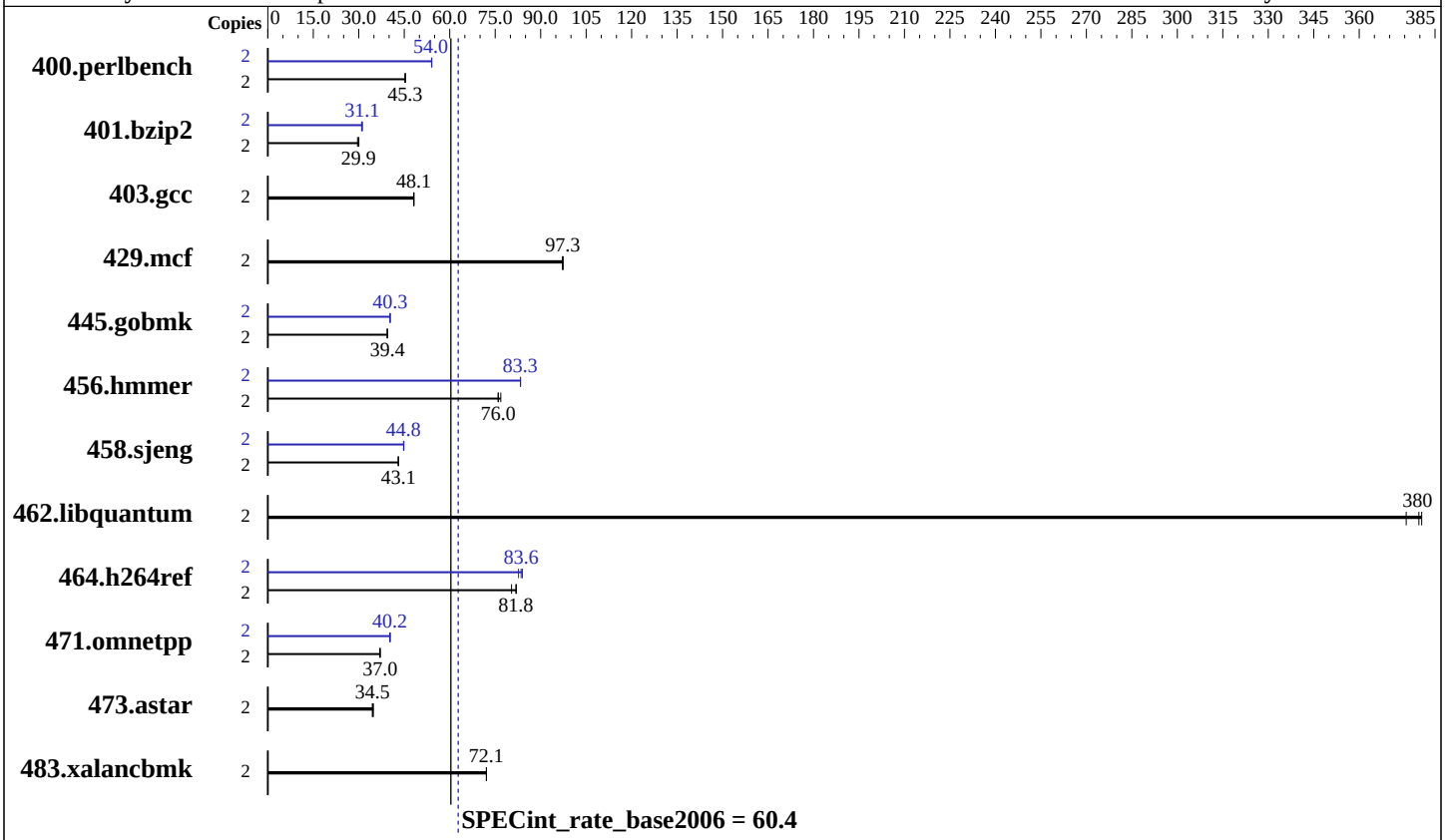
Express5800/R110d-1E (Intel Pentium G630)

SPECint®_rate2006 = 62.8

SPECint_rate_base2006 = 60.4

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

Test date: Mar-2012
Hardware Availability: Jan-2012
Software Availability: Dec-2011



Hardware

CPU Name:	Intel Pentium G630
CPU Characteristics:	
CPU MHz:	2700
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:	256 KB I+D on chip per core
L3 Cache:	3 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC, running at 1066 MHz and CL7)
Disk Subsystem:	1 x 160 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1 (Santiago) 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux;
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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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	2	**431**	**45.3**	430	45.4	432	45.3	2	361	54.1	362	54.0	**362**	**54.0**
401.bzip2	2	643	30.0	652	29.6	**645**	**29.9**	2	624	30.9	**621**	**31.1**	619	31.2
403.gcc	2	334	48.2	335	48.1	**334**	**48.1**	2	334	48.2	335	48.1	**334**	**48.1**
429.mcf	2	**187**	**97.3**	187	97.4	188	97.2	2	**187**	**97.3**	187	97.4	188	97.2
445.gobmk	2	**532**	**39.4**	533	39.4	532	39.4	2	520	40.4	520	40.3	**520**	**40.3**
456.hmmer	2	246	76.0	243	76.8	**246**	**76.0**	2	**224**	**83.3**	224	83.3	224	83.4
458.sjeng	2	562	43.0	**562**	**43.1**	562	43.1	2	540	44.8	539	44.9	**540**	**44.8**
462.libquantum	2	109	381	**109**	**380**	110	375	2	109	381	**109**	**380**	110	375
464.h264ref	2	540	82.0	**541**	**81.8**	551	80.4	2	527	84.0	535	82.7	**530**	**83.6**
471.omnetpp	2	**338**	**37.0**	339	36.9	337	37.1	2	311	40.2	309	40.4	**311**	**40.2**
473.astar	2	403	34.8	**407**	**34.5**	407	34.5	2	403	34.8	**407**	**34.5**	407	34.5
483.xalancbmk	2	**191**	**72.1**	191	72.1	191	72.1	2	**191**	**72.1**	191	72.1	191	72.1

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

Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
Default BIOS settings were used.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>

 Added glibc-static-2.12-1.25.el6.x86_64.rpm
 to enable static linking
```

Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

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 -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-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  -m32
```

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
```
icpc -m32
```

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -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=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: basepeak = yes

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-ic12.1-official-linux64.20111122.html`
`http://www.spec.org/cpu2006/flags/NEC-platform-Settings-V1.2-R110d-RevA.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml`
`http://www.spec.org/cpu2006/flags/NEC-platform-Settings-V1.2-R110d-RevA.xml`

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