SPEC® CINT2006 Result
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NEC Corporation

Express5800/T110f-E (Intel Core i3-4330)

SPECint®_rate2006 = 114

SPECint_rate_base2006 = 110

Benchmark	Copies	Result
400.perlbench	4 / 4	101 / 83.7
401.bzip2	4 / 4	55.0 / 52.8
403.gcc	4	86.7
429.mcf	4	139
445.gobmk	4 / 4	74.3 / 72.2
456.hmmer	4 / 4	162 / 159
458.sjeng	4 / 4	81.0 / 77.2
462.libquantum	4	1090
464.h264ref	4 / 4	139 / 134
471.omnetpp	4 / 4	63.9 / 61.0
473.astar	4	61.8
483.xalancbmk	4	127

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Hardware

CPU Name:	Intel Core i3-4330
CPU Characteristics:	
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
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:	4 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) Kernel 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 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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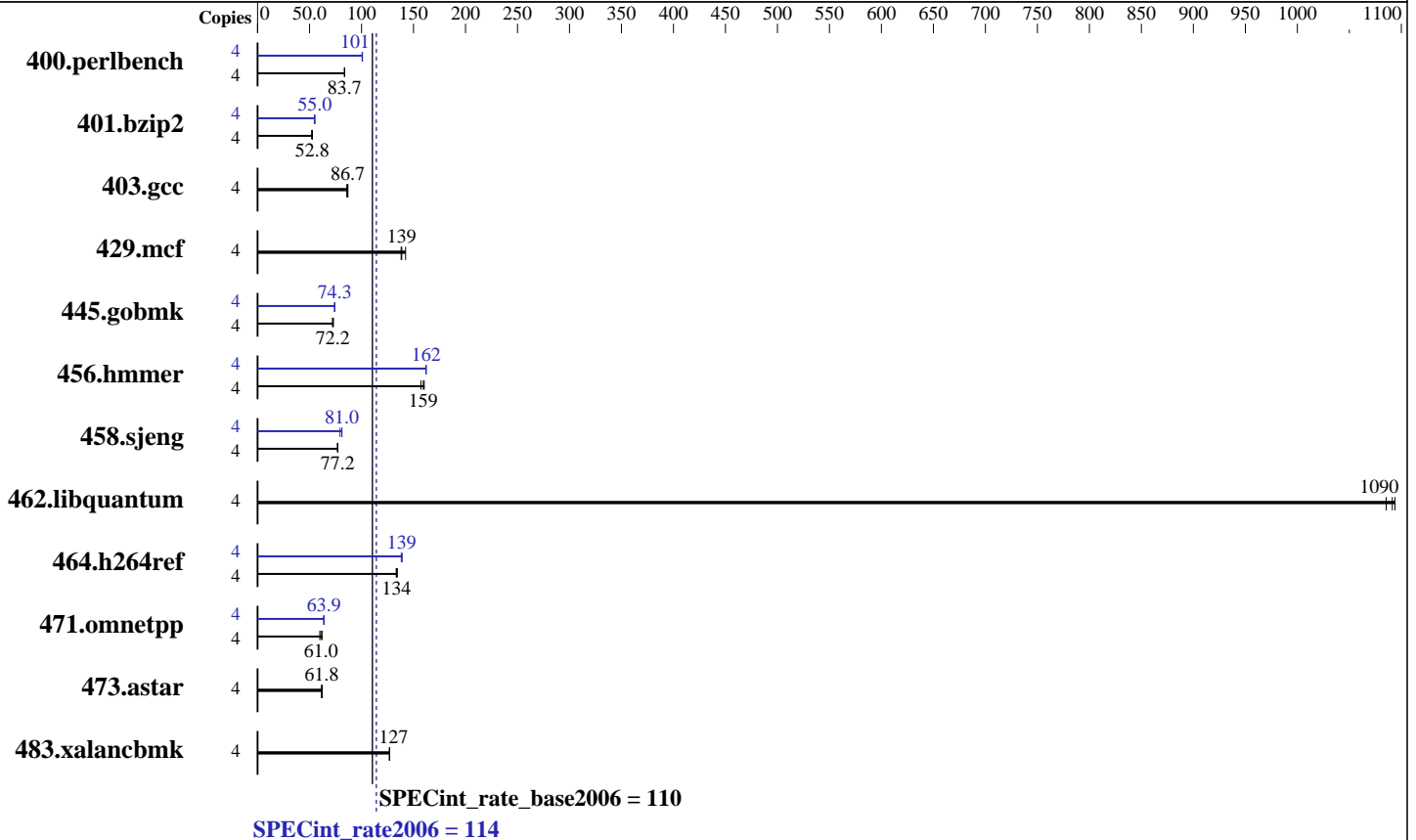
SPECint_rate_base2006 = 110

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

Test date: Nov-2013
Hardware Availability: Oct-2013
Software Availability: Sep-2013

Results Table

Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
				Base							Peak			
400.perlbench	4	**467**	**83.7**	467	83.7	467	83.7	4	387	101	**388**	**101**	389	101
401.bzip2	4	**732**	**52.8**	743	52.0	731	52.8	4	**702**	**55.0**	705	54.7	700	55.1
403.gcc	4	375	85.8	371	86.8	**371**	**86.7**	4	375	85.8	371	86.8	**371**	**86.7**
429.mcf	4	**263**	**139**	256	142	264	138	4	**263**	**139**	256	142	264	138
445.gobmk	4	**581**	**72.2**	575	73.0	581	72.2	4	568	73.9	**565**	**74.3**	564	74.4
456.hmmer	4	**234**	**159**	238	157	233	160	4	231	162	230	162	**230**	**162**
458.sjeng	4	631	76.7	**627**	**77.2**	627	77.2	4	610	79.3	**598**	**81.0**	596	81.2
462.libquantum	4	76.4	1090	**75.9**	**1090**	75.8	1090	4	76.4	1090	**75.9**	**1090**	75.8	1090
464.h264ref	4	**663**	**134**	664	133	658	134	4	641	138	637	139	**638**	**139**
471.omnetpp	4	403	62.1	**410**	**61.0**	418	59.9	4	390	64.1	**391**	**63.9**	393	63.6
473.astar	4	451	62.2	**455**	**61.8**	456	61.5	4	451	62.2	**455**	**61.8**	456	61.5
483.xalancbmk	4	**217**	**127**	218	127	217	127	4	**217**	**127**	218	127	217	127

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

   BIOS Settings:
    Energy Performance: Performance

General Notes

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

   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>

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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:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
    -opt-mem-layout-trans=3
```

C++ benchmarks:
```
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
    -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -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
```

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Software Availability: Sep-2013

Peak Compiler Invocation (Continued)

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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
               -ansi-alias -opt-mem-layout-trans=3

    456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

    458.sjeng: -xCORE-AVX2(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: -xCORE-AVX2(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:

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Peak Optimization Flags (Continued)

```
471.omnetpp: -xCORE-AVX2(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/sh -lsmartheap
```

    473.astar: basepeak = yes

    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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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