SPEC® CINT2006 Result
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NEC Corporation

SPECint®_rate2006 = 154

Express5800/T110i (Intel Core i3-7300)
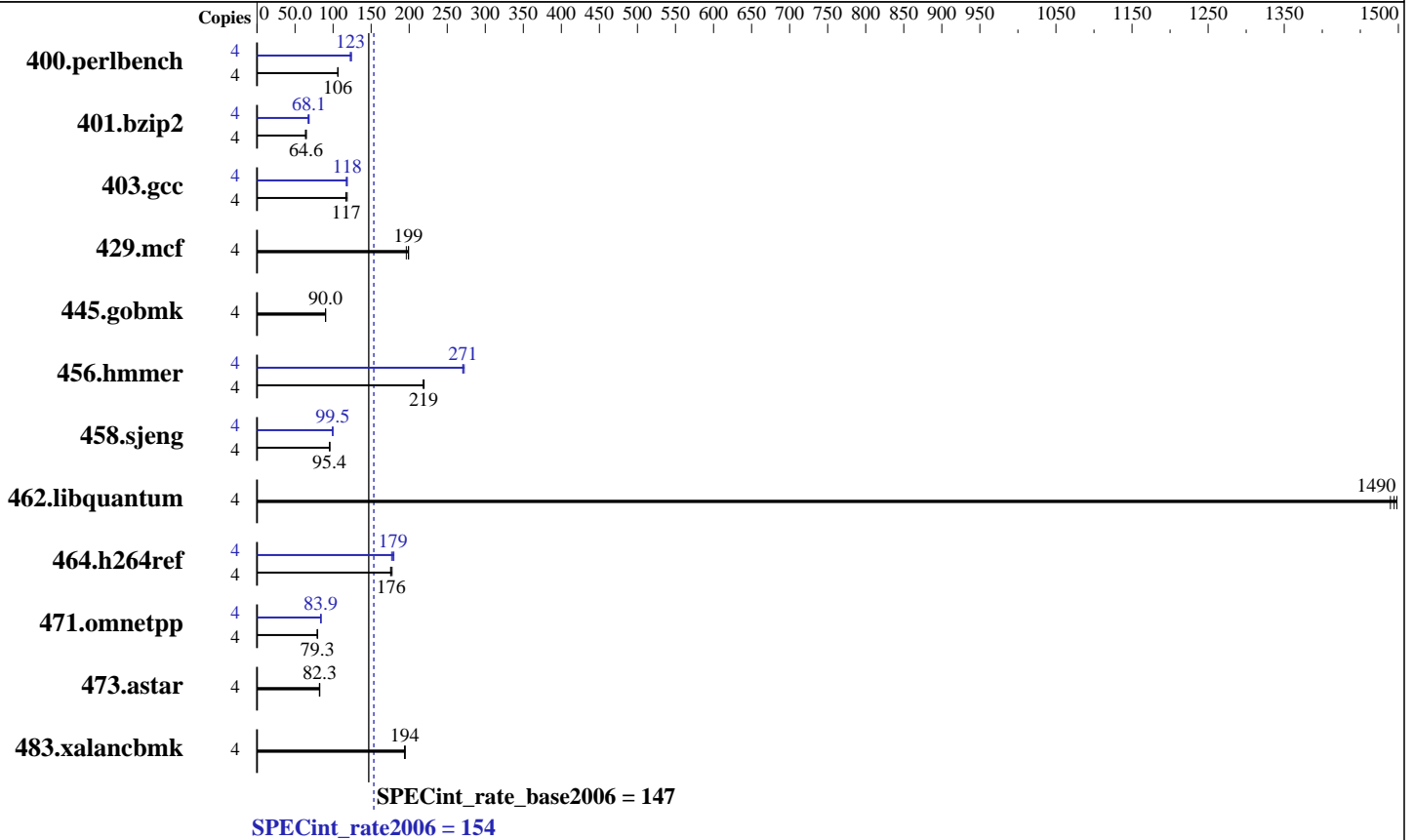
SPECint_rate_base2006 = 147

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

Test date: Mar-2017
Hardware Availability: Apr-2017
Software Availability: Jan-2017

SPECint_rate_base2006 = 147

SPECint_rate2006 = 154

	Hardware	
CPU Name:	Intel Core i3-7300	
CPU Characteristics:		
CPU MHz:	4000	
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:	32 GB (2 x 16 GB 2Rx8 PC4-2400T-E)	
Disk Subsystem:	1 x 1 TB SATA, 7200 RPM	
Other Hardware:	None	

	Software	
Operating System:	Red Hat Enterprise Linux Server release 7.3 (Maipo) Kernel 3.10.0-514.6.1.el7.x86_64	
Compiler:	C/C++: Version 17.0.0.098 of Intel C/C++ Compiler 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 V10.2	

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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	367	107	368	106	**368**	**106**	4	**318**	**123**	318	123	315	124
401.bzip2	4	607	63.6	**597**	**64.6**	596	64.8	4	575	67.1	563	68.5	**567**	**68.1**
403.gcc	4	272	119	276	117	**275**	**117**	4	272	119	**272**	**118**	275	117
429.mcf	4	186	196	183	199	**183**	**199**	4	186	196	183	199	**183**	**199**
445.gobmk	4	**466**	**90.0**	467	89.9	465	90.3	4	**466**	**90.0**	467	89.9	465	90.3
456.hmmer	4	171	218	170	220	**170**	**219**	4	137	272	**138**	**271**	138	271
458.sjeng	4	505	95.8	**508**	**95.4**	508	95.3	4	486	99.6	**486**	**99.5**	487	99.3
462.libquantum	4	55.3	1500	**55.5**	**1490**	55.6	1490	4	55.3	1500	**55.5**	**1490**	55.6	1490
464.h264ref	4	504	176	499	178	**502**	**176**	4	500	177	492	180	**495**	**179**
471.omnetpp	4	314	79.7	316	79.1	**315**	**79.3**	4	298	83.9	297	84.1	**298**	**83.9**
473.astar	4	340	82.5	**341**	**82.3**	343	82.0	4	340	82.5	**341**	**82.3**	343	82.0
483.xalancbmk	4	142	195	**142**	**194**	142	194	4	142	195	**142**	**194**	142	194

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

Submit Notes

   The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset 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:
    Power Management Policy: Custom
    Energy Performance: Performance
    DCU Streamer Prefetcher: Disabled

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/sh10.2"

   Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
   memory using Redhat Enterprise Linux 7.2
   Transparent Huge Pages enabled by default

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Base Compiler Invocation

C benchmarks:
```
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

C++ benchmarks:
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

Base Portability Flags

```
        400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
           401.bzip2: -D_FILE_OFFSET_BITS=64
             403.gcc: -D_FILE_OFFSET_BITS=64
             429.mcf: -D_FILE_OFFSET_BITS=64
           445.gobmk: -D_FILE_OFFSET_BITS=64
           456.hmmer: -D_FILE_OFFSET_BITS=64
           458.sjeng: -D_FILE_OFFSET_BITS=64
       462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
          464.h264ref: -D_FILE_OFFSET_BITS=64
         471.omnetpp: -D_FILE_OFFSET_BITS=64
           473.astar: -D_FILE_OFFSET_BITS=64
       483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

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

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap
```

Base Other Flags

C benchmarks:
```
        403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
`icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-D_FILE_OFFSET_BITS=64`
429.mcf: `-D_FILE_OFFSET_BITS=64`
445.gobmk: `-D_FILE_OFFSET_BITS=64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
464.h264ref: `-D_FILE_OFFSET_BITS=64`
471.omnetpp: `-D_FILE_OFFSET_BITS=64`
473.astar: `-D_FILE_OFFSET_BITS=64`
483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)`
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -auto-ilp32 -qopt-mem-layout-trans=3`

401.bzip2: `-prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)`
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -qopt-prefetch -auto-ilp32`
`-qopt-mem-layout-trans=3`

403.gcc: `-xCORE-AVX2 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3`

429.mcf: `basepeak = yes`

445.gobmk: `basepeak = yes`

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Peak Optimization Flags (Continued)

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
`-qopt-mem-layout-trans=3`

458.sjeng: `-prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)`
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -unroll4 -auto-ilp32`
`-qopt-mem-layout-trans=3`

462.libquantum: basepeak = yes

464.h264ref: `-prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)`
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -unroll2 -qopt-mem-layout-trans=3`

C++ benchmarks:

471.omnetpp: `-prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)`
`-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2)`
`-qopt-ra-region-strategy=block`
`-qopt-mem-layout-trans=3 -Wl,-z,muldefs`
`-L/sh10.2 -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-ic17.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.xml

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

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