SPEC® CINT2006 Result
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NEC Corporation

Express5800/GT110g-S (Intel Core i3-4350)

SPECint®_rate2006 = 117

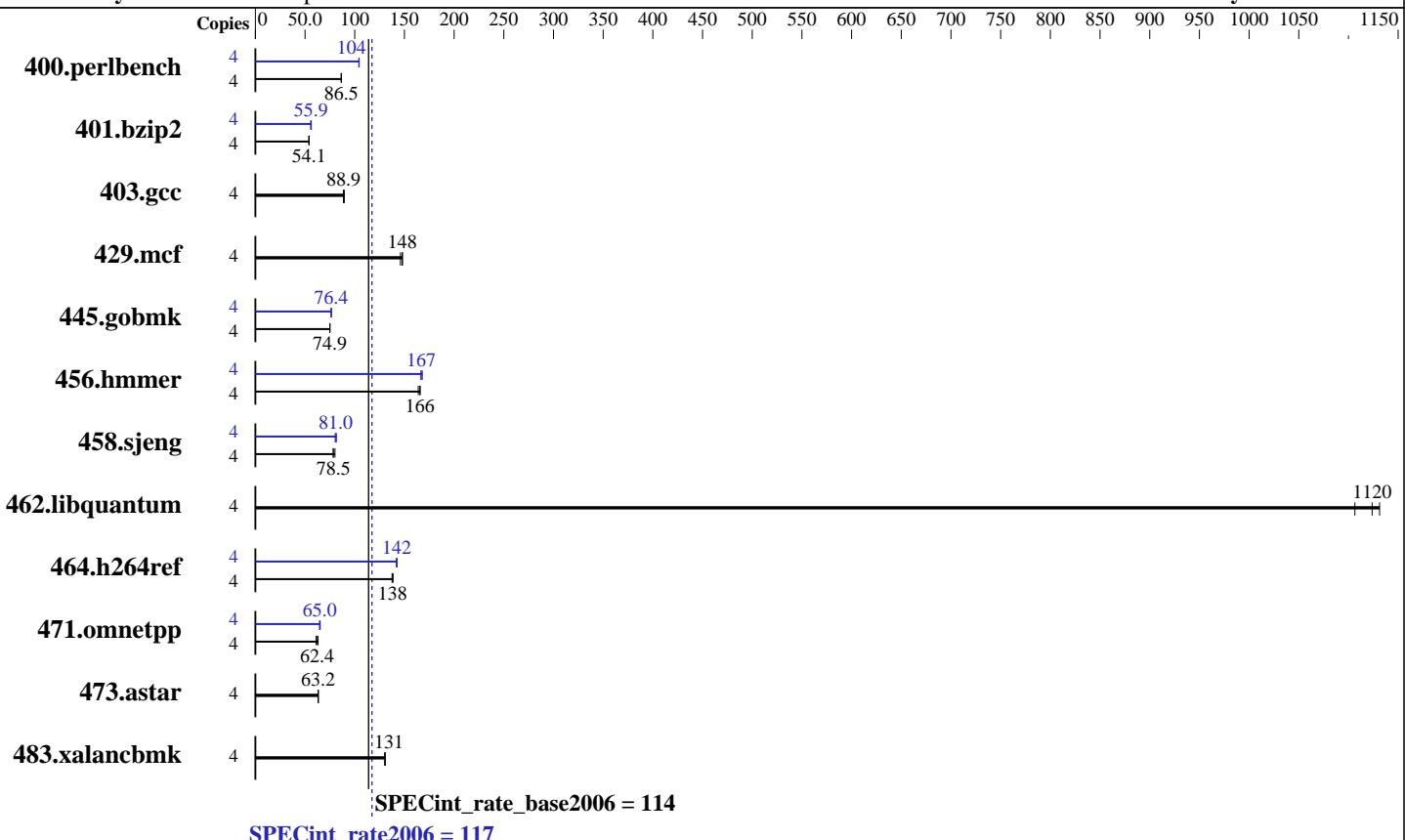SPECint_rate_base2006 = 114

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

Test date: May-2014
Hardware Availability: Jul-2014
Software Availability: Jan-2014

Benchmark	Copies	Result
400.perlbench	4 / 4	104 / 86.5
401.bzip2	4 / 4	55.9 / 54.1
403.gcc	4	88.9
429.mcf	4	148
445.gobmk	4 / 4	76.4 / 74.9
456.hmmer	4 / 4	167 / 166
458.sjeng	4 / 4	81.0 / 78.5
462.libquantum	4	1120
464.h264ref	4 / 4	142 / 138
471.omnetpp	4 / 4	65.0 / 62.4
473.astar	4	63.2
483.xalancbmk	4	131

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Hardware

CPU Name: Intel Core i3-4350
CPU Characteristics:
CPU MHz: 3600
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 PC3-12800E-11, ECC)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
Kernel 2.6.32-431.el6.x86_64
Compiler: C/C++: Version 14.0.2.144 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	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	451	86.7	**452**	**86.5**	453	86.3	4	375	104	**375**	**104**	374	105
401.bzip2	4	713	54.1	**713**	**54.1**	718	53.7	4	686	56.3	692	55.7	**691**	**55.9**
403.gcc	4	360	89.5	**362**	**88.9**	363	88.6	4	360	89.5	**362**	**88.9**	363	88.6
429.mcf	4	250	146	**247**	**148**	246	148	4	250	146	**247**	**148**	246	148
445.gobmk	4	559	75.0	560	74.9	**560**	**74.9**	4	551	76.1	**549**	**76.4**	549	76.5
456.hmmer	4	**225**	**166**	228	164	225	166	4	**224**	**167**	222	168	224	167
458.sjeng	4	618	78.3	**617**	**78.5**	604	80.1	4	594	81.5	603	80.3	**597**	**81.0**
462.libquantum	4	73.3	1130	**73.7**	**1120**	74.9	1110	4	73.3	1130	**73.7**	**1120**	74.9	1110
464.h264ref	4	**641**	**138**	643	138	639	139	4	620	143	624	142	**622**	**142**
471.omnetpp	4	**401**	**62.4**	396	63.1	409	61.1	4	387	64.5	**385**	**65.0**	383	65.2
473.astar	4	**445**	**63.2**	443	63.4	445	63.1	4	**445**	**63.2**	443	63.4	445	63.1
483.xalancbmk	4	**211**	**131**	212	130	211	131	4	**211**	**131**	212	130	211	131

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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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-R120-RevB.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-R120-RevB.xml

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