SPEC® CINT2006 Result
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NEC Corporation

SPECint®_rate2006 = 1250

Express5800/R120f-1M (Intel Xeon E5-2698 v3)

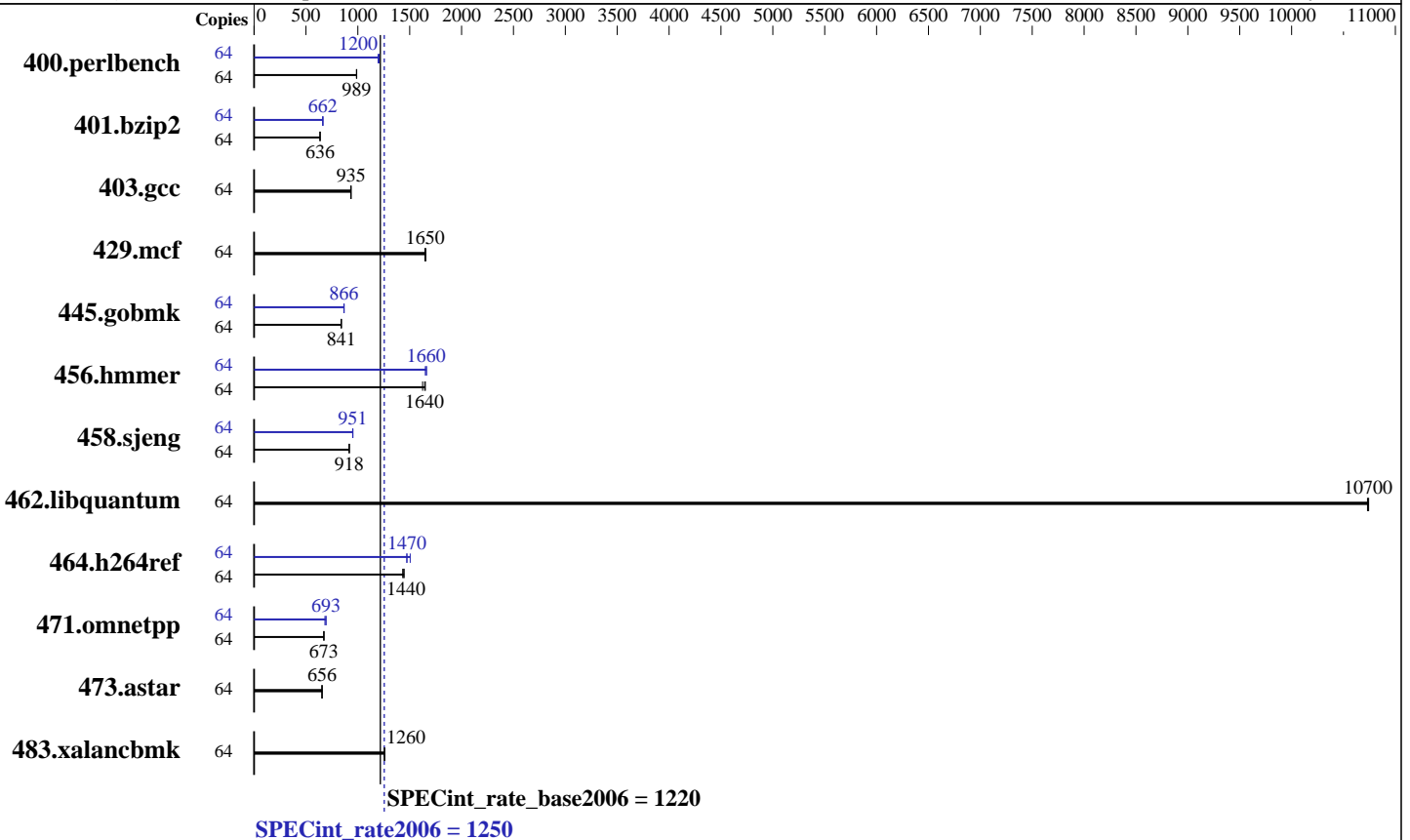SPECint_rate_base2006 = 1220

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

Test date: Nov-2014
Hardware Availability: Feb-2015
Software Availability: May-2014

Copies

Benchmark	Copies	Base	Peak
400.perlbench	64	989	1200
401.bzip2	64	636	662
403.gcc	64	935	
429.mcf	64	1650	
445.gobmk	64	841	866
456.hmmer	64	1640	1660
458.sjeng	64	918	951
462.libquantum	64	10700	
464.h264ref	64	1440	1470
471.omnetpp	64	673	693
473.astar	64	656	
483.xalancbmk	64	1260	

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Hardware

CPU Name:	Intel Xeon E5-2698 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	32 cores, 2 chips, 16 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	40 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
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 2.6.32-431.17.1.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	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	632	989	**632**	**989**	634	986	64	523	1200	**520**	**1200**	520	1200
401.bzip2	64	970	637	972	636	**971**	**636**	64	933	662	930	664	**933**	**662**
403.gcc	64	553	932	551	935	**551**	**935**	64	553	932	551	935	**551**	**935**
429.mcf	64	353	1660	354	1650	**354**	**1650**	64	353	1660	354	1650	**354**	**1650**
445.gobmk	64	**799**	**841**	800	839	797	842	64	776	866	**775**	**866**	773	869
456.hmmer	64	362	1650	368	1620	**363**	**1640**	64	359	1660	362	1650	**360**	**1660**
458.sjeng	64	845	917	**844**	**918**	844	918	64	**814**	**951**	813	953	815	950
462.libquantum	64	**123**	**10700**	124	10700	123	10700	64	**123**	**10700**	124	10700	123	10700
464.h264ref	64	979	1450	989	1430	**982**	**1440**	64	962	1470	**961**	**1470**	941	1500
471.omnetpp	64	594	674	595	673	**595**	**673**	64	586	683	577	693	**577**	**693**
473.astar	64	687	654	**685**	**656**	685	656	64	687	654	**685**	**656**	685	656
483.xalancbmk	64	**351**	**1260**	351	1260	352	1260	64	**351**	**1260**	351	1260	352	1260

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:
      Power Management Policy: Custom
      Energy Performance: Performance
      Patrol Scrub: Disabled
      Cluster on Die: Enabled

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.:

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General Notes (Continued)

```
numactl --interleave=all runspec <etc>
```

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`

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Peak Compiler Invocation (Continued)

        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: `-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`

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Peak Optimization Flags (Continued)

C++ benchmarks:

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-V1.2-120f-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-V1.2-120f-RevB.xml

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

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