SPEC® CINT2006 Result

NEC Corporation

Express5800/E120d-M (Intel Xeon E5-2470)

SPECint®_rate2006 = 301

SPECint_rate_base2006 = 289

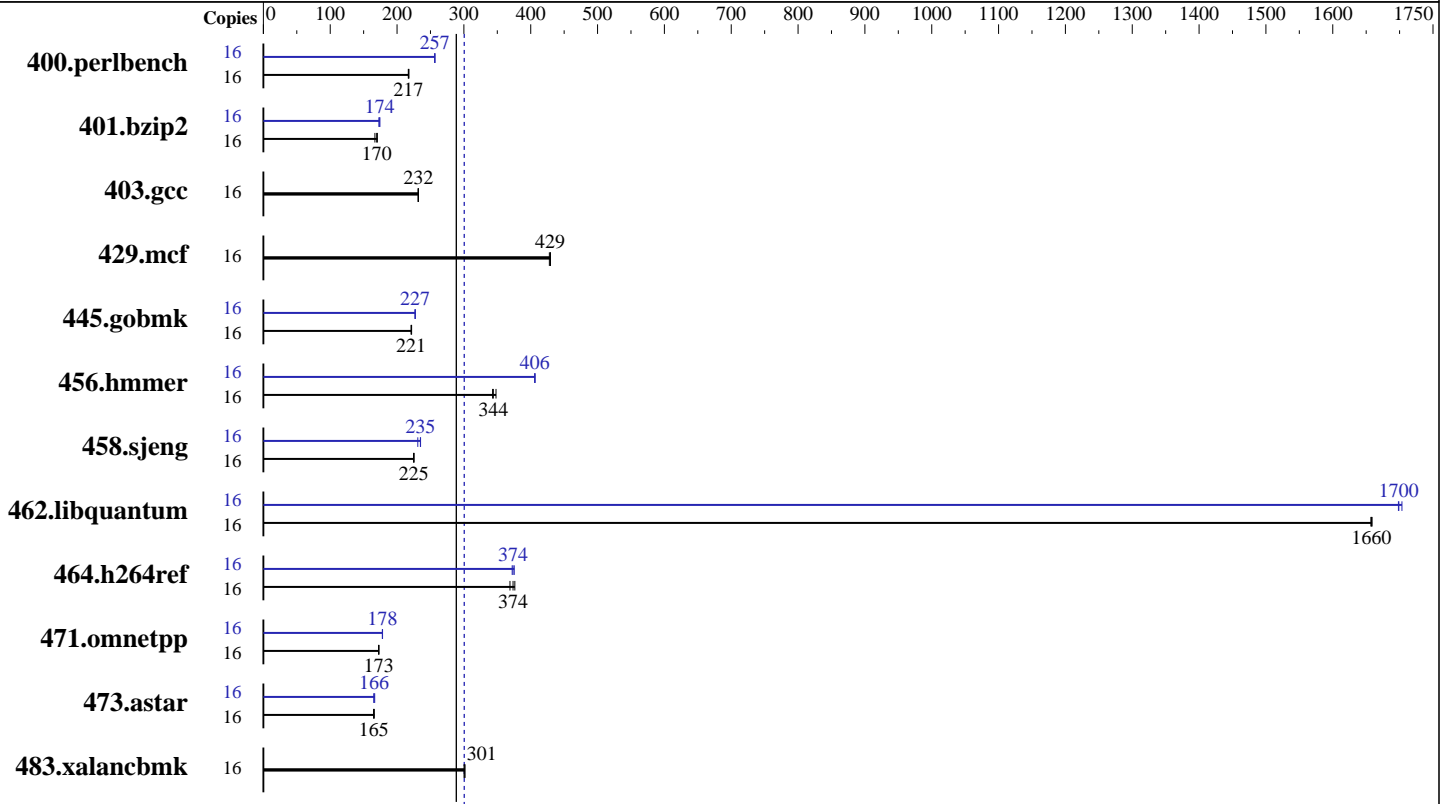**CPU2006 license:** 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Jul-2012
Hardware Availability: Jul-2012
Software Availability: Feb-2012

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Hardware

CPU Name:	Intel Xeon E5-2470
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	8 cores, 1 chip, 8 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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 x 250 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) Kernel 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.3.293 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	16	721	217	**719**	**217**	718	218	16	610	256	**609**	**257**	609	257
401.bzip2	16	925	167	**911**	**170**	905	171	16	894	173	**887**	**174**	886	174
403.gcc	16	555	232	**555**	**232**	557	231	16	555	232	**555**	**232**	557	231
429.mcf	16	340	430	341	428	**340**	**429**	16	340	430	341	428	**340**	**429**
445.gobmk	16	**758**	**221**	759	221	757	222	16	**739**	**227**	739	227	739	227
456.hmmer	16	**434**	**344**	429	348	435	343	16	**368**	**406**	368	406	367	407
458.sjeng	16	862	225	**860**	**225**	859	225	16	**824**	**235**	838	231	823	235
462.libquantum	16	200	1660	**200**	**1660**	200	1660	16	195	1700	**195**	**1700**	195	1700
464.h264ref	16	**948**	**374**	941	376	960	369	16	943	375	951	372	**948**	**374**
471.omnetpp	16	580	172	**579**	**173**	578	173	16	562	178	**561**	**178**	561	178
473.astar	16	677	166	**680**	**165**	681	165	16	679	165	**678**	**166**	674	167
483.xalancbmk	16	368	300	366	302	**366**	**301**	16	368	300	366	302	**366**	**301**

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
     Memory Voltage: 1.5 V

General Notes

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

     Added glibc-static-2.12-1.47.el6.x86_64.rpm
     to enable static linking

     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

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General Notes (Continued)

```
runspec command invoked through numactl i.e.:
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:
```
-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
```

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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: `-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: `-xAVX(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: `-xAVX -ipo -O3 -no-prec-div -opt-prefetch`
                `-opt-mem-layout-trans=3`

        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`

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Peak Optimization Flags (Continued)

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: `-xAVX -ipo -O3 -no-prec-div -opt-prefetch`
`-opt-mem-layout-trans=3 -Wl,-z,muldefs`
`-L/opt/SmartHeap_8.1/lib -lsmartheap`

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-linux64.20120425.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-ic12.1-official-linux64.20120425.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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