SPEC® CINT2006 Result

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NEC Corporation

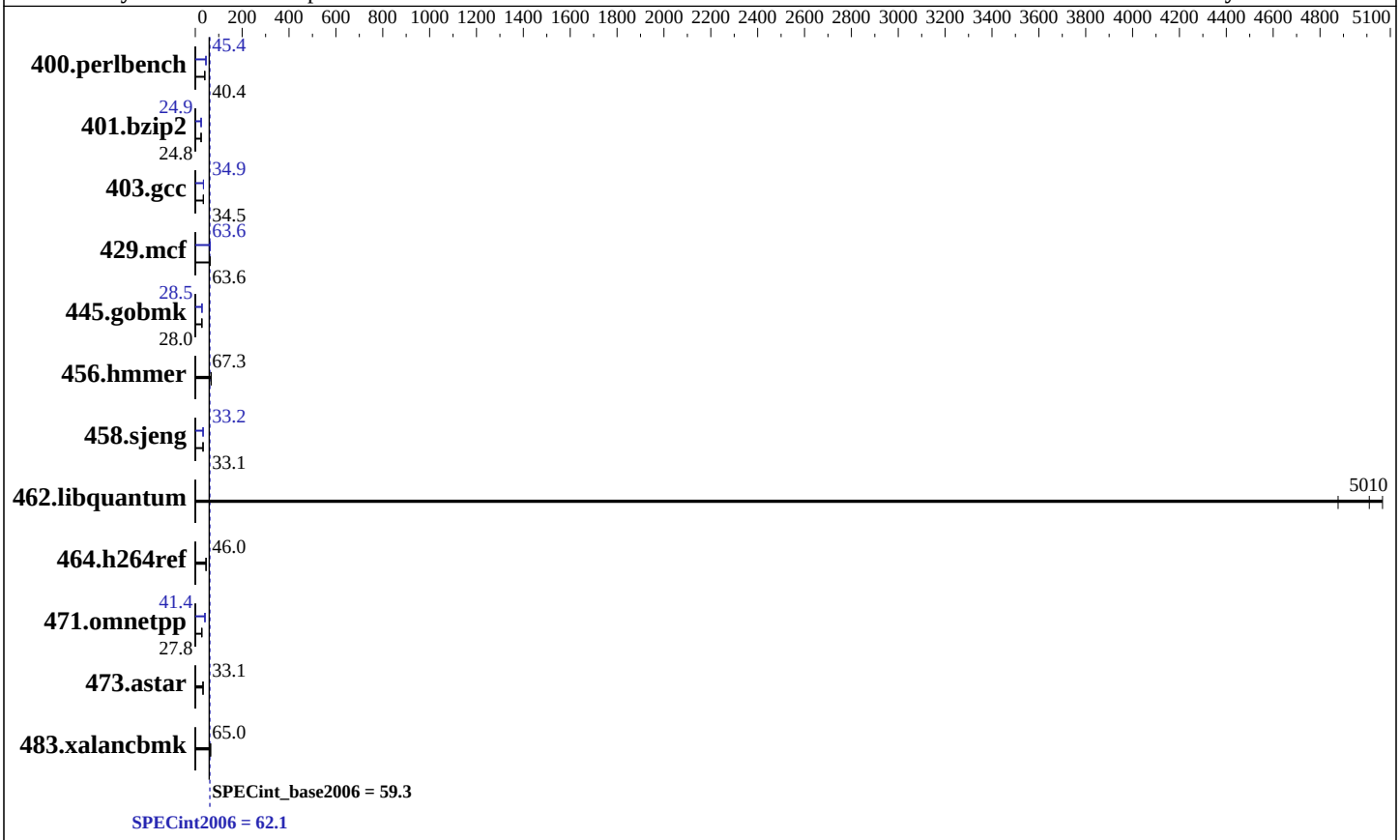
Express5800/B120f-h (Intel Xeon E5-2640 v3)

SPECint®2006 = 62.1

SPECint_base2006 = 59.3

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

Test date: Mar-2015
Hardware Availability: Jun-2015
Software Availability: Oct-2014



Hardware

CPU Name:	Intel Xeon E5-2640 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
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:	128 GB (8 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
Disk Subsystem:	1 x 400 GB SATA, SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.6 (Santiago) Kernel 2.6.32-504.el6.x86_64
Compiler:	C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**242**	**40.4**	242	40.3	242	40.4	215	45.5	215	45.4	**215**	**45.4**
401.bzip2	**390**	**24.8**	389	24.8	391	24.7	387	24.9	387	24.9	**387**	**24.9**
403.gcc	234	34.5	**234**	**34.5**	233	34.5	**231**	**34.9**	231	34.8	231	34.9
429.mcf	143	64.0	**143**	**63.6**	145	62.7	143	63.7	**143**	**63.6**	144	63.2
445.gobmk	**374**	**28.0**	373	28.1	374	28.0	368	28.5	**368**	**28.5**	368	28.5
456.hmmer	139	67.3	**139**	**67.3**	139	67.4	139	67.3	**139**	**67.3**	139	67.4
458.sjeng	366	33.1	**366**	**33.1**	366	33.1	**364**	**33.2**	365	33.1	364	33.3
462.libquantum	4.09	5070	**4.14**	**5010**	4.25	4880	4.09	5070	**4.14**	**5010**	4.25	4880
464.h264ref	**481**	**46.0**	482	45.9	481	46.0	**481**	**46.0**	482	45.9	481	46.0
471.omnetpp	227	27.5	**224**	**27.8**	224	27.9	**151**	**41.4**	153	40.8	151	41.4
473.astar	213	33.0	**212**	**33.1**	212	33.1	213	33.0	**212**	**33.1**	212	33.1
483.xalancbmk	**106**	**65.0**	106	64.9	106	65.1	**106**	**65.0**	106	64.9	106	65.1

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
BIOS Settings:
 Energy Performance: Performance
 Patrol Scrub: Disabled
 Hyper-Threading: Disabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "16"

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:

```
icc  -m64
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m64

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

445.gobmk: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):
icpc -m64

471.omnetpp: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -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)
-opt-prefetch -ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: basepeak = yes

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

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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) -opt-ra-region-strategy=block -ansi-alias -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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.xml

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For other inquiries, please contact webmaster@spec.org.

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