



SPEC[®] CINT2006 Result

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NEC Corporation

SPECint[®]2006 = 43.7

Express5800/E110d-1 (Intel Xeon E3-1260L)

SPECint_base2006 = 40.3

CPU2006 license: 9006

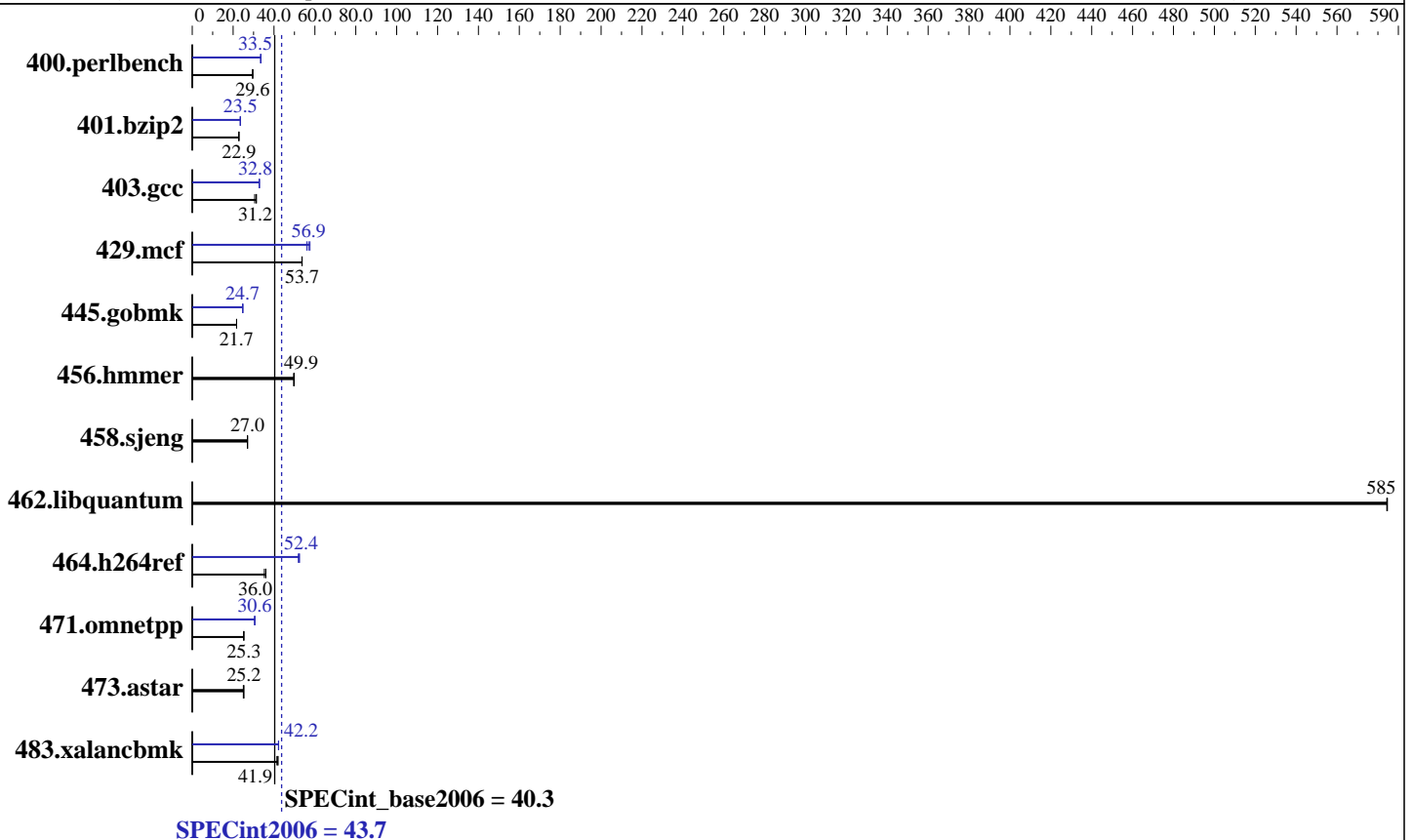
Test date: Jul-2011

Test sponsor: NEC Corporation

Hardware Availability: Jun-2011

Tested by: NEC Corporation

Software Availability: Mar-2011



Hardware

CPU Name: Intel Xeon E3-1260L
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 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: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)
 Disk Subsystem: 1 x 160 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ Intel 64 Compiler XE for applications running on Intel 64, Version 12.0.3.174 Build 20110309
 Auto Parallel: Yes
 File System: ext3
 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	331	29.5	<u>330</u>	<u>29.6</u>	330	29.6	<u>291</u>	<u>33.5</u>	292	33.4	291	33.6
401.bzip2	424	22.7	<u>422</u>	<u>22.9</u>	422	22.9	411	23.5	<u>410</u>	<u>23.5</u>	409	23.6
403.gcc	256	31.4	<u>258</u>	<u>31.2</u>	264	30.5	245	32.9	246	32.8	<u>245</u>	<u>32.8</u>
429.mcf	<u>170</u>	<u>53.7</u>	170	53.6	170	53.8	158	57.6	163	56.0	<u>160</u>	<u>56.9</u>
445.gobmk	<u>484</u>	<u>21.7</u>	484	21.7	483	21.7	425	24.7	<u>424</u>	<u>24.7</u>	424	24.7
456.hammer	<u>187</u>	<u>49.9</u>	188	49.6	187	49.9	<u>187</u>	<u>49.9</u>	188	49.6	187	49.9
458.sjeng	449	27.0	<u>448</u>	<u>27.0</u>	446	27.1	449	27.0	<u>448</u>	<u>27.0</u>	446	27.1
462.libquantum	35.4	585	35.5	584	<u>35.4</u>	<u>585</u>	35.4	585	35.5	584	<u>35.4</u>	<u>585</u>
464.h264ref	627	35.3	615	36.0	<u>615</u>	<u>36.0</u>	426	51.9	<u>423</u>	<u>52.4</u>	422	52.5
471.omnetpp	247	25.3	<u>248</u>	<u>25.3</u>	248	25.2	205	30.5	<u>204</u>	<u>30.6</u>	204	30.6
473.astar	<u>278</u>	<u>25.2</u>	281	25.0	278	25.2	<u>278</u>	<u>25.2</u>	281	25.0	278	25.2
483.xalancbmk	165	41.9	167	41.4	<u>165</u>	<u>41.9</u>	<u>163</u>	<u>42.2</u>	164	42.2	163	42.3

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 1800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

BIOS Settings:
Hyper-Threading Technology: Disabled

General Notes

OMP_NUM_THREADS set to number of cores

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64



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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:

```
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:

```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib64 -lsmartheap64
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

Base Other Flags

C benchmarks:

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

Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc -m64
```

```
400.perlbench: icc -m32
```

```
429.mcf: icc -m32
```

```
445.gobmk: icc -m32
```

```
464.h264ref: icc -m32
```

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Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

401.bzip2: -DSPEC_CPU_LP64

403.gcc: -DSPEC_CPU_LP64

456.hmmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

473.astar: -DSPEC_CPU_LP64

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xAVX(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

-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

401.bzip2: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -inline-calloc

-opt-malloc-options=3 -auto-ilp32

-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

429.mcf: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)

-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32

-ansi-alias

-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)

-auto-ilp32 -ansi-alias

-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

456.hmmmer: basepeak = yes

458.sjeng: basepeak = yes

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

```
464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
             -ansi-alias
             -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:

```
471.omnetpp: -xAVX(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/opt/SmartHeap_8.1/lib -lsmartheap
             -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

473.astar: basepeak = yes

```
483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
               -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
               -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

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-ic12.0-linux64-revB.html>
<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>
<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.xml>

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

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