SPEC® CINT2006 Result

NEC Corporation

Express5800/T110b
(Intel Xeon X3460)

SPECint®2006 =   35.5

SPECint_base2006 =   32.1

400.perlbench	29.6 / 24.1
401.bzip2	18.1 / 17.8
403.gcc	26.2 / 24.3
429.mcf	46.2 / 41.0
445.gobmk	25.9 / 21.9
456.hmmer	49.1 / 45.4
458.sjeng	27.1 / 26.1
462.libquantum	241 / 236
464.h264ref	39.4 / 31.7
471.omnetpp	27.2 / 21.4
473.astar	19.4 / 18.9
483.xalancbmk	35.7

SPECint_base2006 = 32.1
SPECint2006 = 35.5

Hardware

CPU Name:	Intel Xeon X3460
CPU Characteristics:	Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 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:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (4 x 4 GB PC3-10600R, 2 rank, CL9, ECC)
Disk Subsystem:	1x160 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 200911012 Package ID: l_cproc_p_11.1.059
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1

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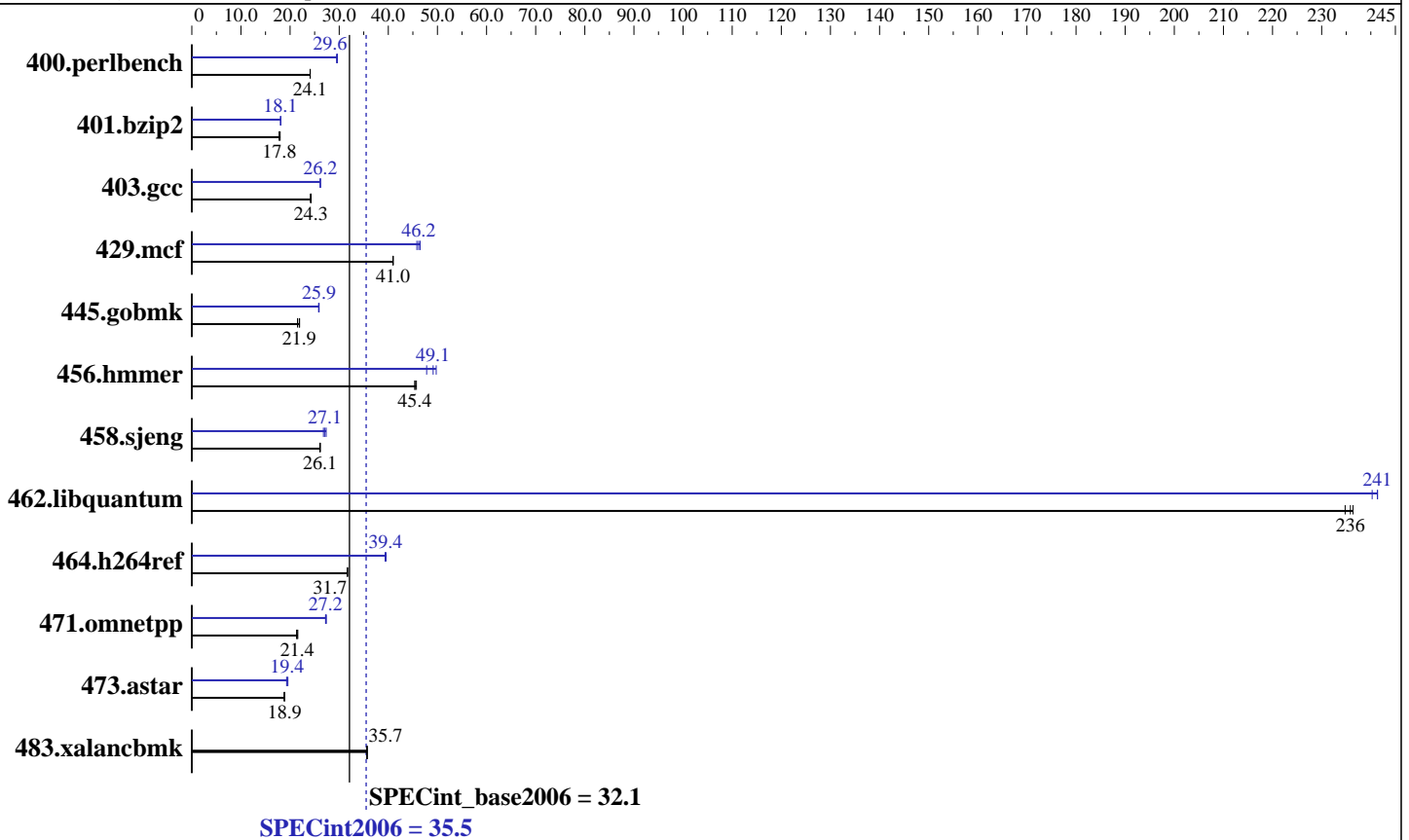
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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	405	24.1	**406**	**24.1**	406	24.1	332	29.5	**330**	**29.6**	330	29.6
401.bzip2	537	18.0	542	17.8	**541**	**17.8**	534	18.1	532	18.1	**534**	**18.1**
403.gcc	**332**	**24.3**	331	24.3	334	24.1	308	26.2	**308**	**26.2**	308	26.1
429.mcf	222	41.0	**223**	**41.0**	223	40.9	199	45.8	**197**	**46.2**	196	46.5
445.gobmk	478	21.9	**480**	**21.9**	488	21.5	407	25.8	405	25.9	**405**	**25.9**
456.hmmer	204	45.7	**205**	**45.4**	205	45.4	195	47.8	**190**	**49.1**	188	49.7
458.sjeng	**464**	**26.1**	463	26.2	465	26.0	442	27.4	**447**	**27.1**	452	26.8
462.libquantum	87.7	236	**87.9**	**236**	88.3	235	85.8	241	86.2	240	**85.8**	**241**
464.h264ref	**698**	**31.7**	699	31.6	698	31.7	**562**	**39.4**	562	39.4	559	39.6
471.omnetpp	290	21.6	293	21.3	**291**	**21.4**	228	27.4	**229**	**27.2**	230	27.2
473.astar	372	18.9	374	18.8	**372**	**18.9**	359	19.6	364	19.3	**362**	**19.4**
483.xalancbmk	193	35.7	**194**	**35.7**	194	35.6	193	35.7	**194**	**35.7**	194	35.6

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

Platform Notes

Default BIOS settings were used.

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter

Base Compiler Invocation

C benchmarks:
    icc -m64

C++ benchmarks:
    icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

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$SPECint2006 =$ 35.5

$SPECint\_base2006 =$ 32.1

CPU2006 license: 9006	**Test date:** Feb-2010
Test sponsor: NEC Corporation	**Hardware Availability:** Jan-2010
Tested by: NEC Corporation	**Software Availability:** Nov-2009

Base Portability Flags (Continued)

```
      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:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
    -par-runtime-control -opt-prefetch
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/opt/SmartHeap_8.1/lib64 -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
```

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

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

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

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

Continued on next page

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CPU2006 license: 9006   **Test date:**   Feb-2010
Test sponsor: NEC Corporation   **Hardware Availability:**   Jan-2010
Tested by: NEC Corporation   **Software Availability:**   Nov-2009

Peak Compiler Invocation (Continued)

471.omnetpp: `icpc -m32`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
456.hmmer: `-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_LP64 -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) -static(pass 2)`
`-prof-use(pass 2) -ansi-alias -opt-prefetch`

401.bzip2: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div -static(pass 2) -prof-use(pass 2)`
`-auto-ilp32 -opt-prefetch -ansi-alias`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2`
`-ipo -no-prec-div -ansi-alias`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`
`-ansi-alias -auto-ilp32`

458.sjeng: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)`
`-prof-use(pass 2) -unroll4`

462.libquantum: `-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel`
`-par-runtime-control -opt-prefetch`
`-par-schedule-static=32768 -ansi-alias`

464.h264ref: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)`
`-prof-use(pass 2) -unroll2 -ansi-alias`

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SPECint2006 = 35.5

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CPU2006 license: 9006		**Test date:**	Feb-2010
Test sponsor:	NEC Corporation	**Hardware Availability:**	Jan-2010
Tested by:	NEC Corporation	**Software Availability:**	Nov-2009

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: -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=routine -Wl,-z,muldefs
             -L/opt/SmartHeap_8.1/lib64 -lsmartheap64

    483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revE.20100302.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revE.20100302.xml

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

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