SPEC® CINT2006 Result
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NEC Corporation

Express5800/GT120a
(Intel Xeon E5504)

SPECint®_rate2006 = 136
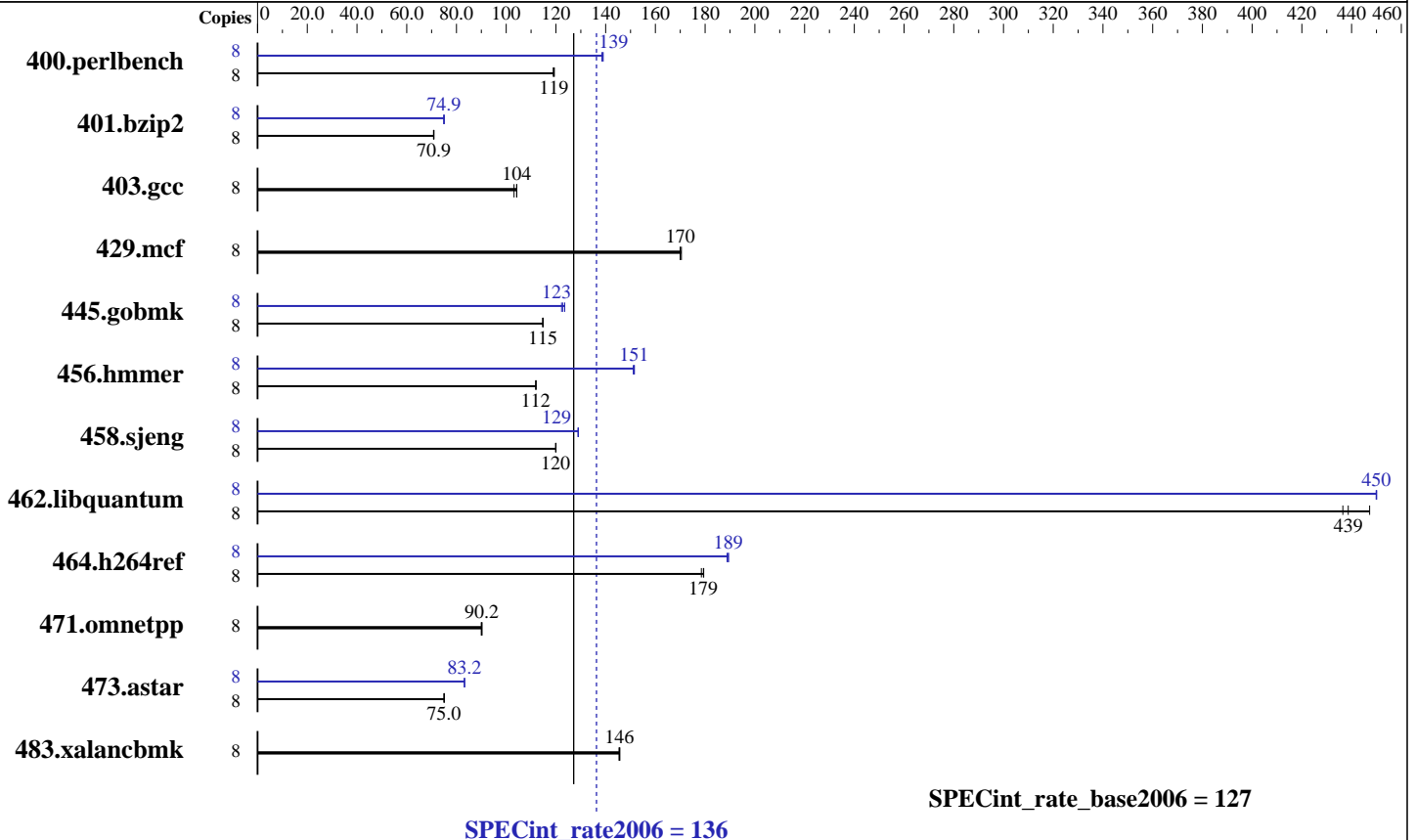
SPECint_rate_base2006 = 127

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jun-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009

Copies

Benchmark	Copies	Result
400.perlbench	8 / 8	139 / 119
401.bzip2	8 / 8	74.9 / 70.9
403.gcc	8	104
429.mcf	8	170
445.gobmk	8 / 8	123 / 115
456.hmmer	8 / 8	151 / 112
458.sjeng	8 / 8	129 / 120
462.libquantum	8 / 8	450 / 439
464.h264ref	8 / 8	189 / 179
471.omnetpp	8	90.2
473.astar	8 / 8	83.2 / 75.0
483.xalancbmk	8	146

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Hardware

CPU Name: Intel Xeon E5504

CPU Characteristics:

CPU MHz: 2000

FPU: Integrated

CPU(s) enabled: 8 cores, 2 chips, 4 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: 4 MB I+D on chip per chip

Other Cache: None

Memory: 48 GB (12 X 4 GB PC3-8500R running at 800 MHz)

Disk Subsystem: 1x160 GB SATA2, 7200 RPM

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp

Compiler: Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081

Auto Parallel: No

File System: ReiserFS

System State: Run level 3 (multi-user)

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502

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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	8	657	119	655	119	**656**	**119**	8	564	138	**563**	**139**	562	139
401.bzip2	8	**1089**	**70.9**	1091	70.8	1088	70.9	8	1028	75.1	**1030**	**74.9**	1031	74.9
403.gcc	8	**618**	**104**	618	104	624	103	8	**618**	**104**	618	104	624	103
429.mcf	8	428	170	**429**	**170**	429	170	8	428	170	**429**	**170**	429	170
445.gobmk	8	732	115	731	115	**731**	**115**	8	**683**	**123**	679	124	686	122
456.hmmer	8	**667**	**112**	667	112	666	112	8	492	152	494	151	**493**	**151**
458.sjeng	8	806	120	**807**	**120**	807	120	8	750	129	**751**	**129**	751	129
462.libquantum	8	371	447	**378**	**439**	380	436	8	**368**	**450**	368	450	368	450
464.h264ref	8	**987**	**179**	987	179	992	178	8	938	189	935	189	**935**	**189**
471.omnetpp	8	**555**	**90.2**	556	90.0	554	90.3	8	**555**	**90.2**	556	90.0	554	90.3
473.astar	8	748	75.1	749	75.0	**749**	**75.0**	8	**675**	**83.2**	675	83.2	675	83.2
483.xalancbmk	8	**379**	**146**	379	146	380	145	8	**379**	**146**	379	146	380	145

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

Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Platform Notes

```
BIOS setting:
NUMA configuration: Enabled
```

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

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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 -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch
```

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -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
```

```
401.bzip2: /opt/intel/Compiler/11.0/081/bin/intel64/icc
```

```
456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc
```

```
458.sjeng: /opt/intel/Compiler/11.0/081/bin/intel64/icc
```

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

```
473.astar: /opt/intel/Compiler/11.0/081/bin/intel64/icpc
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

```
       458.sjeng: -DSPEC_CPU_LP64
   462.libquantum: -DSPEC_CPU_LINUX
       473.astar: -DSPEC_CPU_LP64
   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) -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(pass 2) -static(pass 2)
                 -prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

       403.gcc: basepeak = yes

       429.mcf: basepeak = yes

     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 -auto-ilp32

  462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static
                 -opt-malloc-options=3 -opt-prefetch

    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
```

C++ benchmarks:

```
    471.omnetpp: basepeak = yes

      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 -auto-ilp32
                 -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib64 -lsmartheap64
```

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Peak Optimization Flags (Continued)

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-ic11.0-int-linux64-revF.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revF.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.xml

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

Tested with SPEC CPU2006 v1.1.
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