



SPEC® CINT2006 Result

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NEC Corporation

SPECint®_rate2006 = 184

Express5800/R120b-2
(Intel Xeon X5670)

SPECint_rate_base2006 = 172

CPU2006 license: 9006

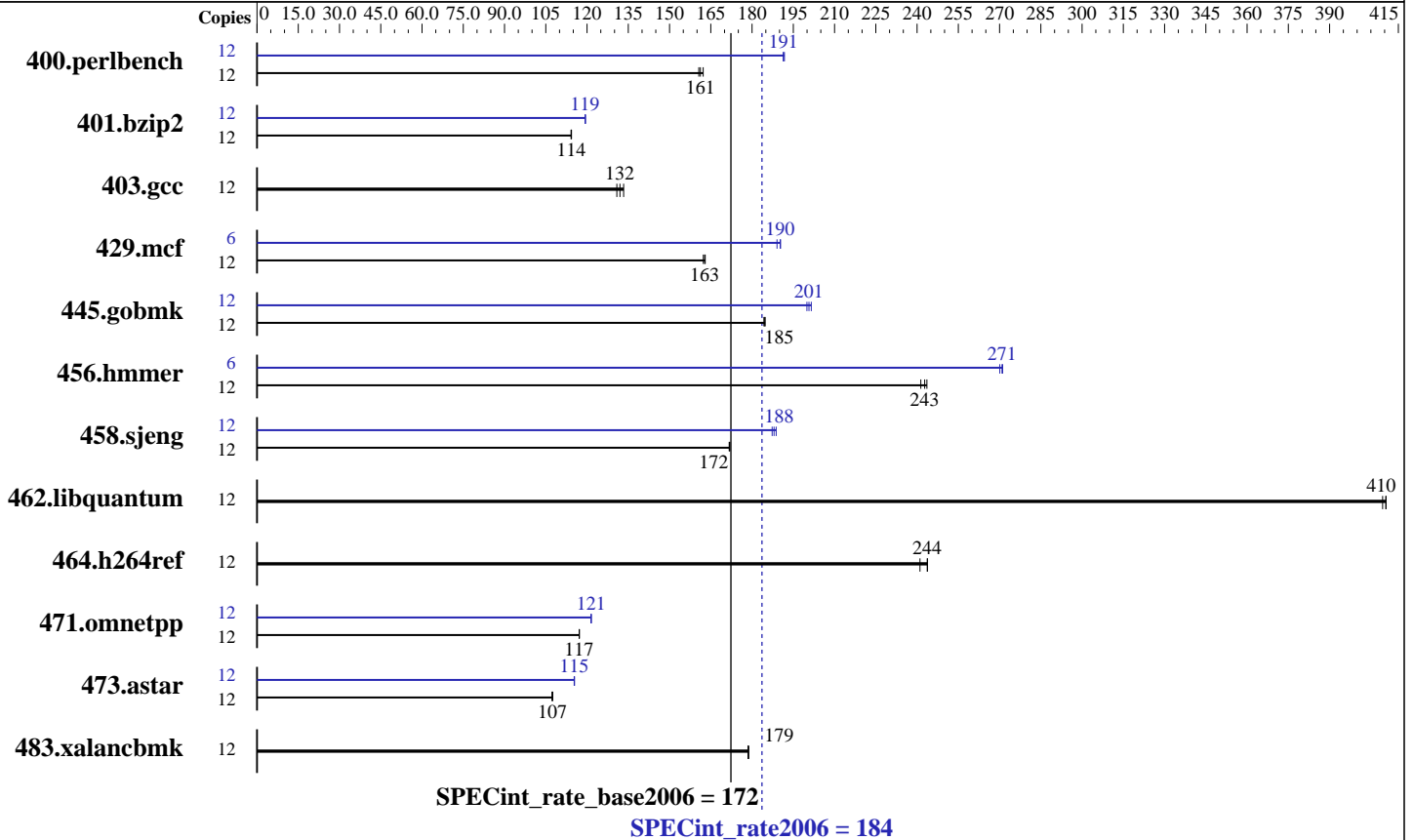
Test date: Aug-2010

Test sponsor: NEC Corporation

Hardware Availability: Sep-2010

Tested by: NEC Corporation

Software Availability: Dec-2009



Hardware

CPU Name: Intel Xeon X5670
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
 CPU MHz: 2933
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 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: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (6 x 8 GB PC3L-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 20091130 Package ID: l_cproc_p_11.1.064
 Auto Parallel: No
 File System: ext3
 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 | Base | | | | | | | Peak | | | | | | |
|----------------|--------|-------------|------------|-------------|------------|------------|------------|--------|------------|------------|-------------|------------|------------|------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 12 | <u>727</u> | <u>161</u> | 723 | 162 | 730 | 161 | 12 | <u>612</u> | <u>191</u> | 611 | 192 | 613 | 191 |
| 401.bzip2 | 12 | <u>1013</u> | <u>114</u> | 1013 | 114 | 1014 | 114 | 12 | <u>971</u> | <u>119</u> | 969 | 119 | 971 | 119 |
| 403.gcc | 12 | 738 | 131 | 725 | 133 | <u>732</u> | <u>132</u> | 12 | 738 | 131 | 725 | 133 | <u>732</u> | <u>132</u> |
| 429.mcf | 12 | 672 | 163 | 674 | 162 | <u>672</u> | <u>163</u> | 6 | 289 | 189 | <u>288</u> | <u>190</u> | 287 | 190 |
| 445.gobmk | 12 | 681 | 185 | 683 | 184 | <u>682</u> | <u>185</u> | 12 | 625 | 202 | <u>627</u> | <u>201</u> | 630 | 200 |
| 456.hammer | 12 | 464 | 241 | <u>461</u> | <u>243</u> | 460 | 244 | 6 | 206 | 271 | 207 | 270 | <u>207</u> | <u>271</u> |
| 458.sjeng | 12 | 846 | 172 | 845 | 172 | <u>845</u> | <u>172</u> | 12 | 769 | 189 | 775 | 187 | <u>772</u> | <u>188</u> |
| 462.libquantum | 12 | 608 | 409 | <u>606</u> | <u>410</u> | 606 | 410 | 12 | 608 | 409 | <u>606</u> | <u>410</u> | 606 | 410 |
| 464.h264ref | 12 | 1102 | 241 | <u>1090</u> | <u>244</u> | 1089 | 244 | 12 | 1102 | 241 | <u>1090</u> | <u>244</u> | 1089 | 244 |
| 471.omnetpp | 12 | 640 | 117 | <u>640</u> | <u>117</u> | 640 | 117 | 12 | 618 | 121 | 617 | 122 | <u>617</u> | <u>121</u> |
| 473.astar | 12 | 783 | 108 | <u>784</u> | <u>107</u> | 785 | 107 | 12 | <u>730</u> | <u>115</u> | 730 | 115 | 730 | 115 |
| 483.xalancbmk | 12 | 463 | 179 | <u>464</u> | <u>179</u> | 464 | 179 | 12 | 463 | 179 | <u>464</u> | <u>179</u> | 464 | 179 |

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:
Performance/Watt: Traditional
Memory Voltage: Normal

General Notes

The Express5800/R120b-1 and
the Express5800/R120b-2 models are electronically equivalent.
The results have been measured on the Express5800/R120b-1 model.

Base Compiler Invocation

C benchmarks:
icc -m32

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Base Compiler Invocation (Continued)

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 -static -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 -m32

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64



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Peak Portability Flags

```

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

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: -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 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

```

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 -lsmarheap

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 -lsmarheap64

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Peak Optimization Flags (Continued)

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-linux64-revE.20100823.00.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100823.00.xml>

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

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