



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 30.1

IBM System x3690 X5 (Intel Xeon L7555)

SPECint_base2006 = 26.4

CPU2006 license: 11

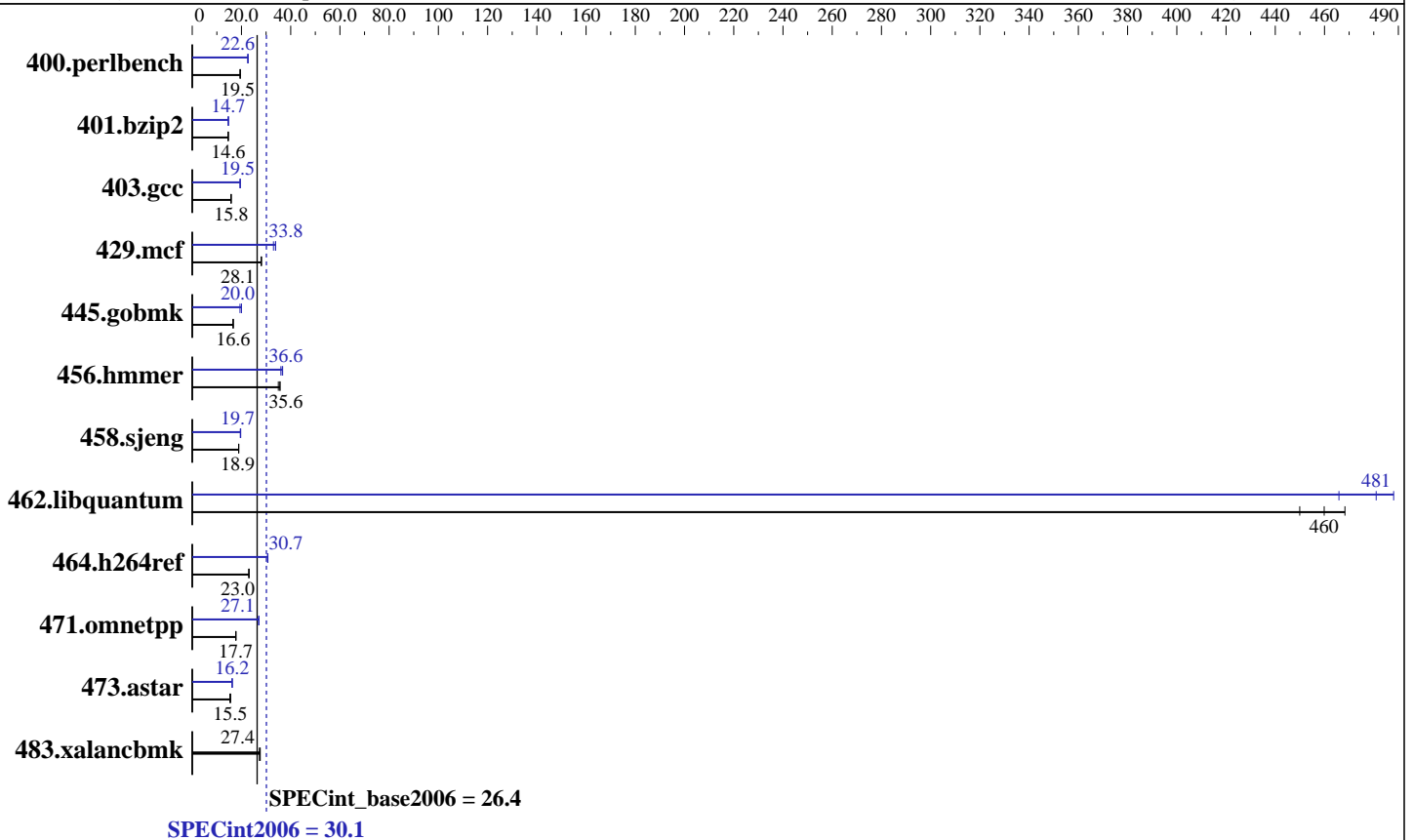
Test date: Jul-2010

Test sponsor: IBM Corporation

Hardware Availability: Aug-2010

Tested by: IBM Corporation

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon L7555
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 24 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (32 x 4 GB PC3-8500R CL7, Quad Rank, running at 978 MHz)
 Disk Subsystem: 1 x 146 GB SAS, 15000 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: Yes
 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 | | | | | |
|----------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | <u>501</u> | <u>19.5</u> | 503 | 19.4 | 501 | 19.5 | 432 | 22.6 | 432 | 22.6 | <u>432</u> | <u>22.6</u> |
| 401.bzip2 | <u>660</u> | <u>14.6</u> | 661 | 14.6 | 659 | 14.6 | 657 | 14.7 | <u>658</u> | <u>14.7</u> | 659 | 14.7 |
| 403.gcc | 511 | 15.8 | <u>510</u> | <u>15.8</u> | 509 | 15.8 | 413 | 19.5 | 414 | 19.4 | <u>413</u> | <u>19.5</u> |
| 429.mcf | <u>325</u> | <u>28.1</u> | 325 | 28.1 | 325 | 28.0 | 276 | 33.0 | <u>270</u> | <u>33.8</u> | 269 | 33.9 |
| 445.gobmk | <u>631</u> | <u>16.6</u> | 629 | 16.7 | 633 | 16.6 | <u>524</u> | <u>20.0</u> | 524 | 20.0 | 541 | 19.4 |
| 456.hammer | 267 | 35.0 | 262 | 35.7 | <u>262</u> | <u>35.6</u> | 254 | 36.7 | 259 | 36.0 | <u>255</u> | <u>36.6</u> |
| 458.sjeng | 641 | 18.9 | 642 | 18.9 | <u>641</u> | <u>18.9</u> | 620 | 19.5 | 615 | 19.7 | <u>615</u> | <u>19.7</u> |
| 462.libquantum | 44.2 | 468 | <u>45.1</u> | <u>460</u> | 46.1 | 450 | 44.5 | 466 | <u>43.1</u> | <u>481</u> | 42.5 | 488 |
| 464.h264ref | 963 | 23.0 | 959 | 23.1 | <u>960</u> | <u>23.0</u> | 720 | 30.7 | <u>721</u> | <u>30.7</u> | 724 | 30.6 |
| 471.omnetpp | <u>353</u> | <u>17.7</u> | 352 | 17.7 | 353 | 17.7 | <u>231</u> | <u>27.1</u> | 231 | 27.1 | 231 | 27.0 |
| 473.astar | 451 | 15.6 | <u>452</u> | <u>15.5</u> | 459 | 15.3 | 433 | 16.2 | 432 | 16.3 | <u>432</u> | <u>16.2</u> |
| 483.xalancbmk | 252 | 27.3 | <u>252</u> | <u>27.4</u> | 250 | 27.6 | 252 | 27.3 | <u>252</u> | <u>27.4</u> | 250 | 27.6 |

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

Platform Notes

Turbo Boost set to Traditional

General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
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
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64

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Base Portability Flags (Continued)

```
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 -opt-prefetch
```

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -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
```

```
471.omnetpp: icpc -m32
```



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Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_IA32
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-alloc
         -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
               -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

```

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

```

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Peak Optimization Flags (Continued)

```
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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64

483.xalanbmk: 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.20100603.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.20100603.xml>

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 11:59:54 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 August 2010.