# SPEC® CINT2006 Result

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## Intel Corporation

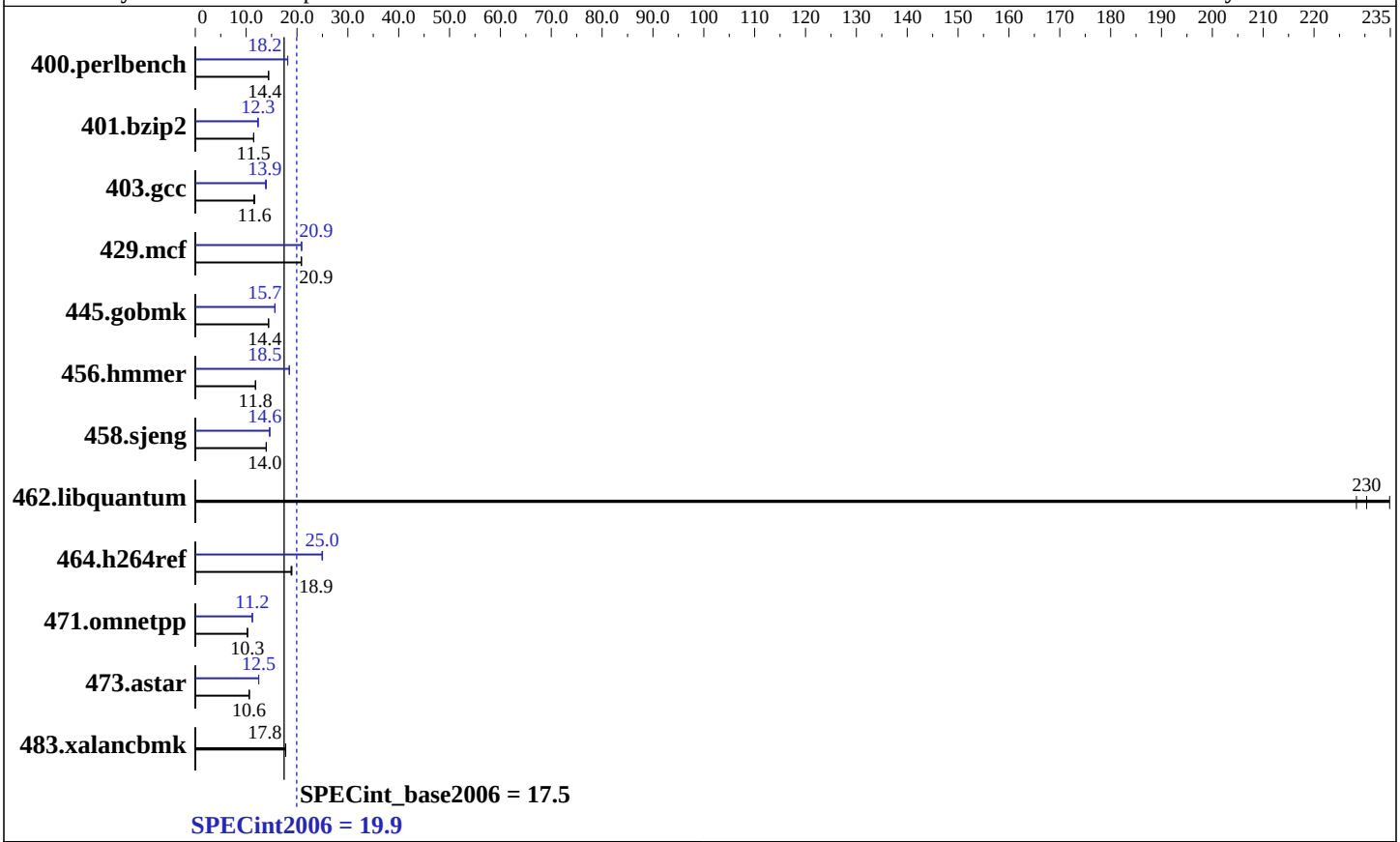
Intel Server System S7000FC4UR (Intel Xeon E7430)

SPECint®2006 = 19.9

SPECint_base2006 = 17.5

**CPU2006 license:** 13
**Test sponsor:** Intel Corporation
**Tested by:** Intel Corporation

**Test date:** Sep-2008
**Hardware Availability:** Sep-2008
**Software Availability:** Nov-2008




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7430 |
| CPU Characteristics: | |
| CPU MHz: | 2133 |
| FPU: | Integrated |
| CPU(s) enabled: | 16 cores, 4 chips, 4 cores/chip |
| CPU(s) orderable: | 1,2,4 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 MB I+D on chip per chip, 3 MB shared / 2 cores |
| L3 Cache: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 32 GB (16x2GB Micron DDR2 5300F,2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 73 GB Seagate SAS, 10K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16-60.0.21-smp |
| Compiler: | Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cc_b_11.0.042 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502 |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | **678** | **14.4** | 677 | 14.4 | 680 | 14.4 | 537 | 18.2 | 538 | 18.2 | **537** | **18.2** |
| 401.bzip2 | 843 | 11.5 | **839** | **11.5** | 839 | 11.5 | **782** | **12.3** | 780 | 12.4 | 784 | 12.3 |
| 403.gcc | **692** | **11.6** | 699 | 11.5 | 690 | 11.7 | 577 | 13.9 | **578** | **13.9** | 583 | 13.8 |
| 429.mcf | 438 | 20.8 | 437 | 20.9 | **437** | **20.9** | 436 | 20.9 | **437** | **20.9** | 437 | 20.9 |
| 445.gobmk | **728** | **14.4** | 729 | 14.4 | 728 | 14.4 | 670 | 15.7 | **670** | **15.7** | 670 | 15.7 |
| 456.hmmer | 787 | 11.8 | 788 | 11.8 | **788** | **11.8** | 504 | 18.5 | 505 | 18.5 | **505** | **18.5** |
| 458.sjeng | 868 | 13.9 | 867 | 14.0 | **867** | **14.0** | 827 | 14.6 | 828 | 14.6 | **827** | **14.6** |
| 462.libquantum | 88.2 | 235 | 90.7 | 228 | **90.0** | **230** | 88.2 | 235 | 90.7 | 228 | **90.0** | **230** |
| 464.h264ref | **1172** | **18.9** | 1174 | 18.8 | 1165 | 19.0 | **886** | **25.0** | 884 | 25.0 | 888 | 24.9 |
| 471.omnetpp | **609** | **10.3** | 609 | 10.3 | 610 | 10.3 | **557** | **11.2** | 557 | 11.2 | 558 | 11.2 |
| 473.astar | 662 | 10.6 | **662** | **10.6** | 661 | 10.6 | 564 | 12.4 | **564** | **12.5** | 562 | 12.5 |
| 483.xalancbmk | **388** | **17.8** | 388 | 17.8 | 388 | 17.8 | **388** | **17.8** | 388 | 17.8 | 388 | 17.8 |

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

## General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetcher: Enabled
High Bandwidth Option: Disabled
```

## Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/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/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

456.hmmer:
```
/opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

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

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch

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

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3

429.mcf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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

456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32

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

462.libquantum: basepeak = yes

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

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

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-ic11.0-int-linux64-revA.20090713.14.html

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.14.xml`


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