# SPEC® CINT2006 Result

## Fujitsu

## CELSIUS R570, Intel Xeon E5530

SPECint®2006 = 29.0

SPECint_base2006 = 25.7

Results chart, values in order:

| Benchmark | Peak | Base |
|-----------|------|------|
| 400.perlbench | 24.0 | 19.1 |
| 401.bzip2 | 15.9 | 14.0 |
| 403.gcc | 24.0 | 21.6 |
| 429.mcf | 39.7 | 39.4 |
| 445.gobmk | 20.9 | 18.0 |
| 456.hmmer | 25.1 | 18.4 |
| 458.sjeng | 21.4 | 19.5 |
| 462.libquantum | | 255 |
| 464.h264ref | 32.1 | 28.4 |
| 471.omnetpp | 21.8 | 19.3 |
| 473.astar | 16.5 | 14.2 |
| 483.xalancbmk | | 28.9 |

SPECint_base2006 = 25.7

SPECint2006 = 29.0

## Hardware

CPU Name: Intel Xeon E5530

CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz

CPU MHz: 2400

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: 8 MB I+D on chip per chip

Other Cache: None

Memory: 24 GB (6x4 GB PC3 10600R, 2 rank, ECC, running at 1066 MHz)

Disk Subsystem: 1 x SATA II, 400 GB, 7200 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 20090131 Package ID: l_cproc_p_11.0.080

Auto Parallel: Yes

File System: ext3

System State: Multi-User Run Level 3

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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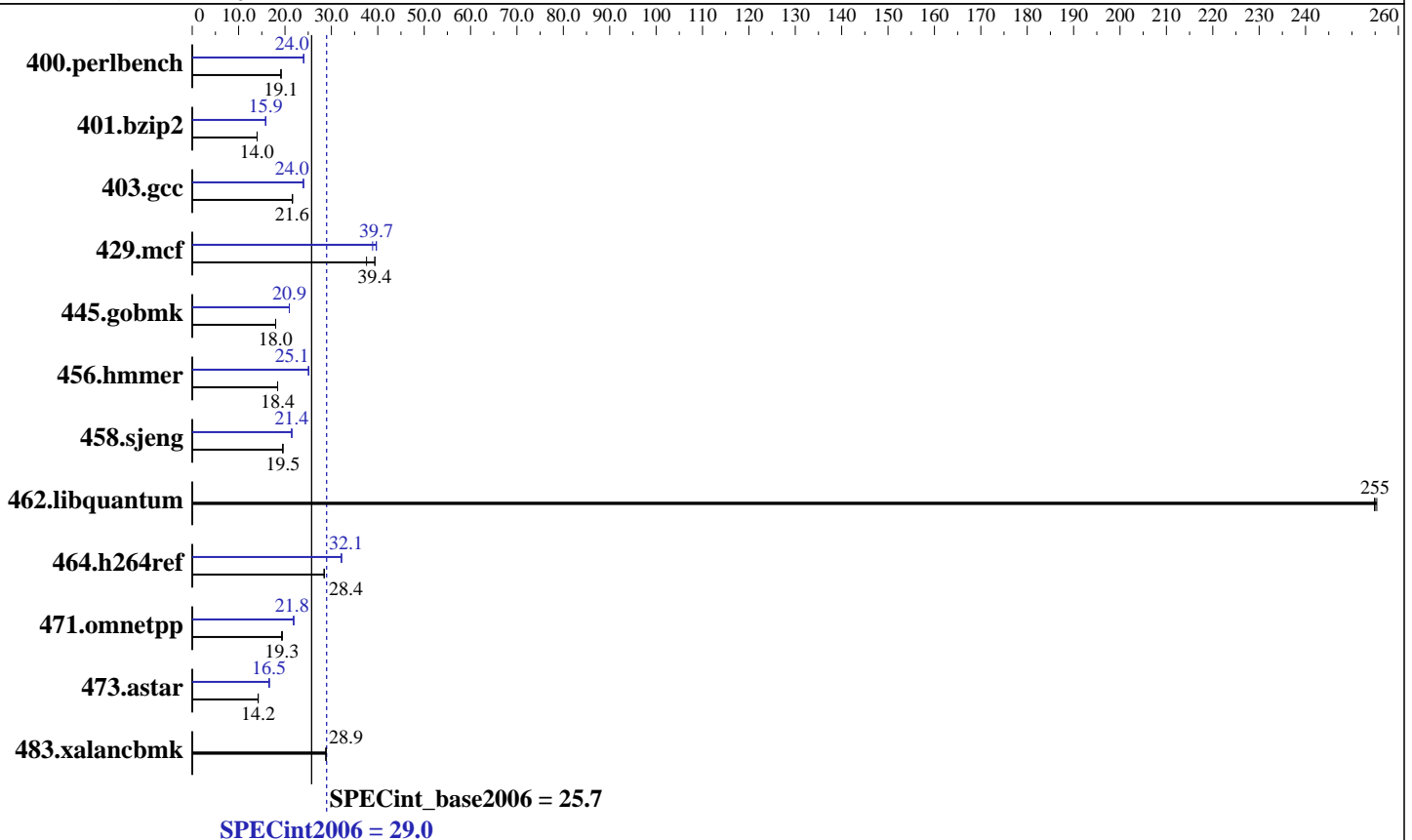
SPECint_base2006 = 25.7

**CPU2006 license:** 19
**Test sponsor:** Fujitsu
**Tested by:** Fujitsu

**Test date:** Sep-2009
**Hardware Availability:** Apr-2009
**Software Availability:** Feb-2009

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 511 | 19.1 | **511** | **19.1** | 510 | 19.2 | 407 | 24.0 | **407** | **24.0** | 406 | 24.0 |
| 401.bzip2 | 690 | 14.0 | 689 | 14.0 | **690** | **14.0** | 611 | 15.8 | **609** | **15.9** | 608 | 15.9 |
| 403.gcc | **373** | **21.6** | 373 | 21.6 | 372 | 21.6 | 336 | 24.0 | 336 | 23.9 | **336** | **24.0** |
| 429.mcf | 243 | 37.6 | 232 | 39.4 | **232** | **39.4** | **230** | **39.7** | 235 | 38.9 | 230 | 39.7 |
| 445.gobmk | 584 | 18.0 | 583 | 18.0 | **583** | **18.0** | 501 | 20.9 | 501 | 20.9 | **501** | **20.9** |
| 456.hmmer | **507** | **18.4** | 507 | 18.4 | 507 | 18.4 | **371** | **25.1** | 371 | 25.1 | 373 | 25.0 |
| 458.sjeng | 620 | 19.5 | 618 | 19.6 | **620** | **19.5** | 564 | 21.5 | 564 | 21.4 | **564** | **21.4** |
| 462.libquantum | **81.3** | **255** | 81.1 | 255 | 81.3 | 255 | **81.3** | **255** | 81.1 | 255 | 81.3 | 255 |
| 464.h264ref | **778** | **28.4** | 777 | 28.5 | 778 | 28.4 | **688** | **32.1** | 687 | 32.2 | 689 | 32.1 |
| 471.omnetpp | 324 | 19.3 | 322 | 19.4 | **323** | **19.3** | 286 | 21.8 | **286** | **21.8** | 285 | 21.9 |
| 473.astar | 494 | 14.2 | 494 | 14.2 | **494** | **14.2** | 425 | 16.5 | 421 | 16.7 | **424** | **16.5** |
| 483.xalancbmk | 240 | 28.8 | 239 | 28.9 | **239** | **28.9** | 240 | 28.8 | 239 | 28.9 | **239** | **28.9** |

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

    BIOS configuration:
    Hyper-Threading Technology set to Disabled.

## General Notes

    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to granularity=fine,scatter
    For information about Fujitsu please visit:
    http://www.fujitsu.com

## 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 -parallel
-par-runtime-control -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -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/11.0/080/bin/intel64/icc
```

```
456.hmmer: /opt/intel/Compiler/11.0/080/bin/intel64/icc
```

```
458.sjeng: /opt/intel/Compiler/11.0/080/bin/intel64/icc
```

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

```
473.astar: /opt/intel/Compiler/11.0/080/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) -auto-ilp32 -opt-prefetch -ansi-alias

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

        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: -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/spec/cpu2006.1.1/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 -auto-ilp32
                 -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64
```

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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-ic11.0-int-linux64-revA.20090710.16.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.20090710.16.xml

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 04:10:11 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 October 2009.