# SPEC® CINT2006 Result

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## Fujitsu

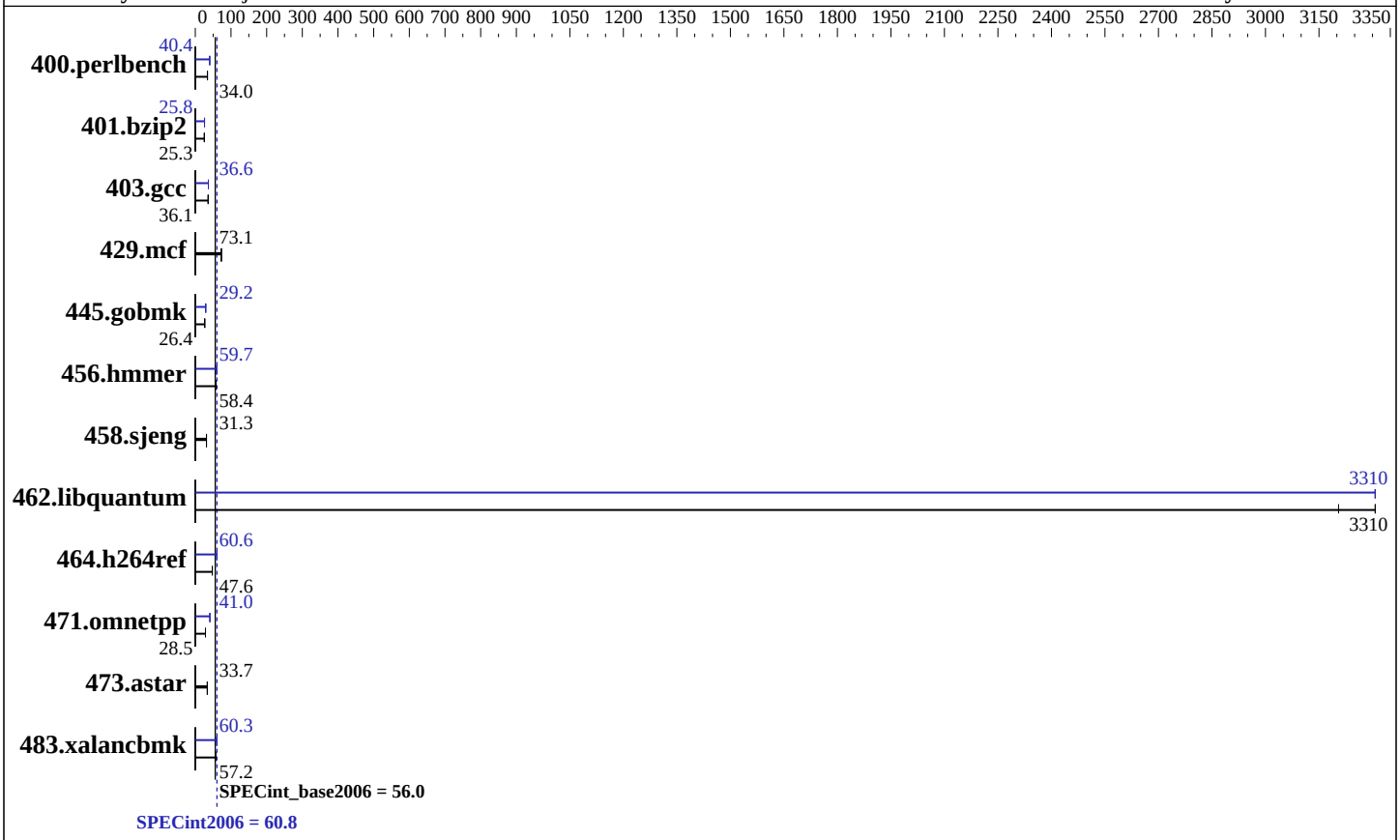
PRIMERGY BX924 S3, Intel Xeon E5-2690, 2.90 GHz

SPECint®2006 = 60.8

SPECint_base2006 = 56.0

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

**Test date:** Feb-2012
**Hardware Availability:** Mar-2012
**Software Availability:** Feb-2012




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2690 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.80 GHz |
| CPU MHz: | 2900 |
| FPU: | Integrated |
| CPU(s) enabled: | 16 cores, 2 chips, 8 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: | 20 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC) |
| Disk Subsystem: | 1 x SATA, 500 GB, 7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.2 (Santiago)<br>2.6.32-220.el6.x86_64 |
| Compiler: | C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap 10 (Multi-Core) |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 286 | 34.1 | 287 | 34.0 | **287** | **34.0** | 242 | 40.3 | 242 | 40.4 | **242** | **40.4** |
| 401.bzip2 | 381 | 25.3 | **381** | **25.3** | 381 | 25.3 | 374 | 25.8 | **373** | **25.8** | 373 | 25.9 |
| 403.gcc | 224 | 35.9 | **223** | **36.1** | 223 | 36.2 | **220** | **36.6** | 220 | 36.6 | 220 | 36.6 |
| 429.mcf | 125 | 73.0 | 125 | 73.2 | **125** | **73.1** | 125 | 73.0 | 125 | 73.2 | **125** | **73.1** |
| 445.gobmk | 397 | 26.4 | 398 | 26.4 | **398** | **26.4** | 359 | 29.2 | **359** | **29.2** | 360 | 29.2 |
| 456.hmmer | **160** | **58.4** | 161 | 58.1 | 160 | 58.4 | 156 | 59.7 | **156** | **59.7** | 156 | 59.8 |
| 458.sjeng | 387 | 31.3 | 387 | 31.3 | **387** | **31.3** | 387 | 31.3 | 387 | 31.3 | **387** | **31.3** |
| 462.libquantum | 6.26 | 3310 | 6.47 | 3200 | **6.26** | **3310** | 6.26 | 3310 | **6.26** | **3310** | 6.26 | 3310 |
| 464.h264ref | 464 | 47.7 | **465** | **47.6** | 465 | 47.6 | 365 | 60.5 | 365 | 60.6 | **365** | **60.6** |
| 471.omnetpp | 219 | 28.6 | **220** | **28.5** | 220 | 28.4 | **153** | **41.0** | 153 | 40.8 | 152 | 41.0 |
| 473.astar | 210 | 33.4 | **209** | **33.7** | 207 | 33.8 | 210 | 33.4 | **209** | **33.7** | 207 | 33.8 |
| 483.xalancbmk | **121** | **57.2** | 121 | 57.0 | 121 | 57.2 | 114 | 60.4 | 115 | 60.2 | **114** | **60.3** |

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

## Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

## Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
Frequency Floor Override = Enable
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "16"

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 For information about Fujitsu please visit: http://www.fujitsu.com
```

## Base Compiler Invocation

C benchmarks:

```
icc  -m64
```

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## Base Compiler Invocation (Continued)

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
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 -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/opt/SmartHeap/lib64 -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

445.gobmk: icc -m32

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## Peak Compiler Invocation (Continued)

464.h264ref: `icc -m32`

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

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-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_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) `-prof-use`(pass 2)
`-opt-prefetch -ansi-alias`

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

403.gcc: `-xAVX -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-prof-use`(pass 2)
`-ansi-alias`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
`-ansi-alias`

458.sjeng: `basepeak = yes`

462.libquantum: `-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`
`-auto-p32`

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## Peak Optimization Flags (Continued)

464.h264ref: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(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) `-opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs -L/opt/SmartHeap/lib -lsmartheap`

473.astar: `basepeak = yes`

483.xalancbmk: `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/opt/SmartHeap/lib -lsmartheap`

## 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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.00.xml


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