# SPEC® CINT2006 Result
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## Fujitsu

PRIMERGY RX200 S6, Intel Xeon X5690, 3.47 GHz

$SPECint^{®}\_rate2006 =$    416

$SPECint\_rate\_base2006 =$   389

| | |
|---|---|
| **CPU2006 license:** 19 | **Test date:** Jan-2011 |
| **Test sponsor:** Fujitsu | **Hardware Availability:** Jul-2010 |
| **Tested by:** Fujitsu | **Software Availability:** Nov-2010 |

**Copies**

- 400.perlbench — 24: 441; 24: 365
- 401.bzip2 — 24: 245; 24: 234
- 403.gcc — 24: 257; 24: 255
- 429.mcf — 12: 399; 24: 307
- 445.gobmk — 24: 427; 24: 406
- 456.hmmer — 12: 592; 24: 508
- 458.sjeng — 24: 415; 24: 392
- 462.libquantum — 24: 1960
- 464.h264ref — 24: 547; 24: 542
- 471.omnetpp — 24: 240; 24: 234
- 473.astar — 24: 239
- 483.xalancbmk — 24: 377

SPECint_rate_base2006 = 389

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## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5690 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.73 GHz |
| CPU MHz: | 3467 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 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 (12 x 4 GB 2Rx4 PC3-10600R-9, ECC) |
| Disk Subsystem: | 1 x SAS, 300 GB, 10000 RPM |
| Other Hardware: | -- |

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64) with SP1, Kernel 2.6.32.12-0.7-default |
| Compiler: | Intel C++ Compiler XE for applications running on IA-32 Version 12.0.0.082 Build 20101006 |
| 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 V9.01 |

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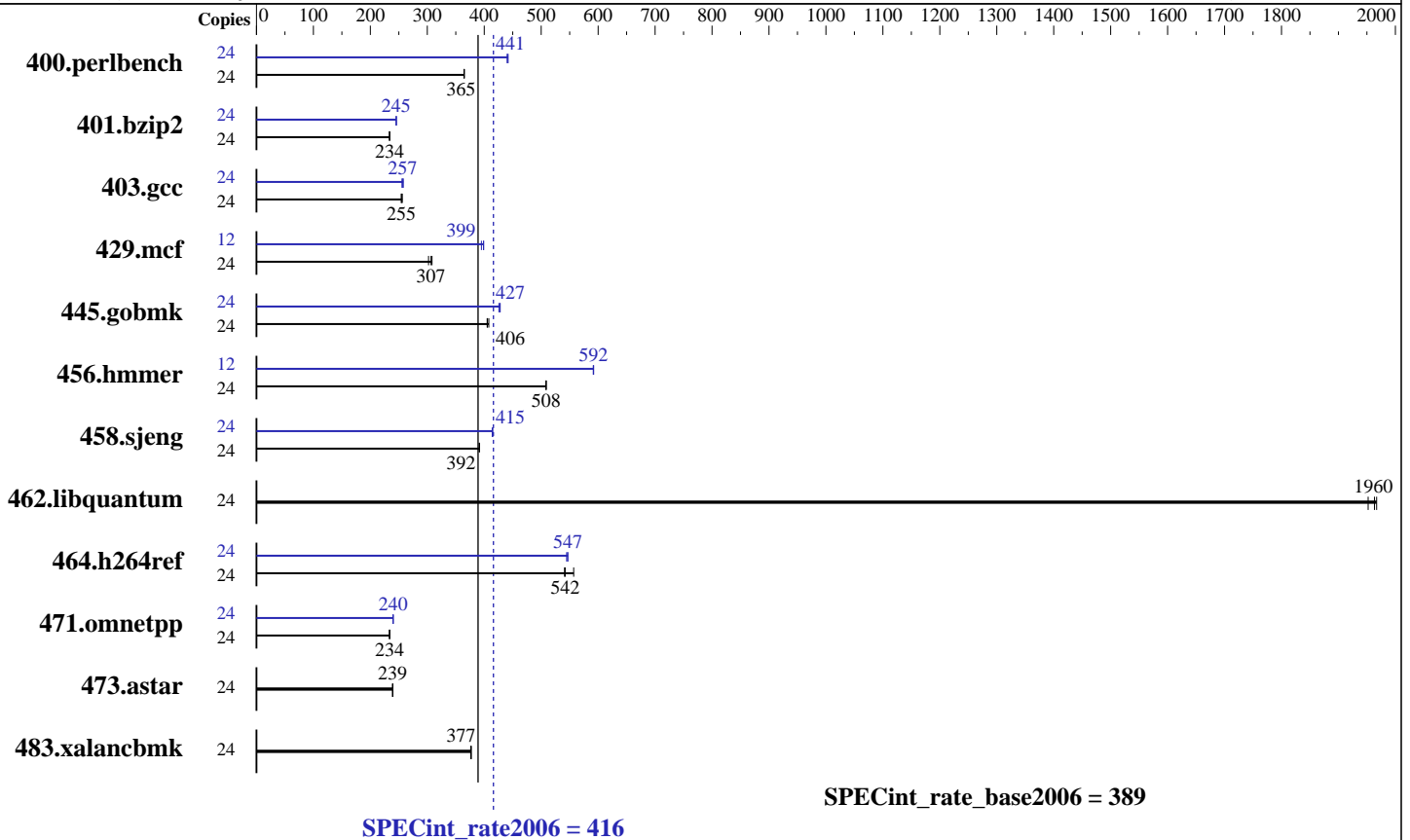
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## Results Table

| Benchmark | Base Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Peak Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400.perlbench | 24 | 642 | 365 | 643 | 364 | **643** | **365** | 24 | **532** | **441** | 532 | 440 | 531 | 442 |
| 401.bzip2 | 24 | 991 | 234 | 991 | 234 | **991** | **234** | 24 | 943 | 246 | 944 | 245 | **944** | **245** |
| 403.gcc | 24 | 760 | 254 | 754 | 256 | **759** | **255** | 24 | 749 | 258 | 756 | 255 | **752** | **257** |
| 429.mcf | 24 | 724 | 302 | **714** | **307** | 710 | 308 | 12 | 277 | 395 | 274 | 399 | **274** | **399** |
| 445.gobmk | 24 | 621 | 405 | 617 | 408 | **621** | **406** | 24 | 588 | 428 | 591 | 426 | **589** | **427** |
| 456.hmmer | 24 | 440 | 509 | **440** | **508** | 441 | 508 | 12 | 189 | 592 | 189 | 591 | **189** | **592** |
| 458.sjeng | 24 | **741** | **392** | 743 | 391 | 741 | 392 | 24 | 701 | 414 | **700** | **415** | 700 | 415 |
| 462.libquantum | 24 | **253** | **1960** | 253 | 1970 | 255 | 1950 | 24 | **253** | **1960** | 253 | 1970 | 255 | 1950 |
| 464.h264ref | 24 | 953 | 557 | **980** | **542** | 982 | 541 | 24 | 975 | 545 | **972** | **547** | 972 | 547 |
| 471.omnetpp | 24 | 641 | 234 | 643 | 233 | **642** | **234** | 24 | **625** | **240** | 626 | 240 | 625 | 240 |
| 473.astar | 24 | 704 | 239 | **704** | **239** | 705 | 239 | 24 | 704 | 239 | **704** | **239** | 705 | 239 |
| 483.xalancbmk | 24 | 440 | 376 | **440** | **377** | 439 | 377 | 24 | 440 | 376 | **440** | **377** | 439 | 377 |

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
     Large pages were not enabled for this run
```

## Platform Notes

```
    BIOS configuration:
    Data Reuse Optimization = Disable
```

## General Notes

```
    For information about Fujitsu please visit: http://www.fujitsu.com
    Binaries were compiled on SLES 10 SP1 with Binutils 2.18.50.0.7.20080502
```

## 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 -opt-prefetch
    -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/smartheap -lsmartheap
    -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

# Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

# Peak Compiler Invocation

C benchmarks (except as noted below):
    icc  -m32

    400.perlbench: icc -m64

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

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# Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
    401.bzip2: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
    458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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)

    401.bzip2: -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 -auto-ilp32 -ansi-alias

      403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div
               -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

      429.mcf: -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 -auto-ilp32

    445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
               -ansi-alias -auto-ilp32

    456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
               -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

    458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(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) -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/smartheap -lsmartheap
```

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## Peak Optimization Flags (Continued)

473.astar: basepeak = yes

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-ic12.0-linux64-revA.20110222.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.xml

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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 16:57:44 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 21 February 2011.