



# SPEC® CINT2006 Result

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## Fujitsu

SPECint®2006 = 24.2

PRIMERGY RX600 S5, Intel Xeon E7530, 1.87 GHz

SPECint\_base2006 = 22.2

CPU2006 license: 19

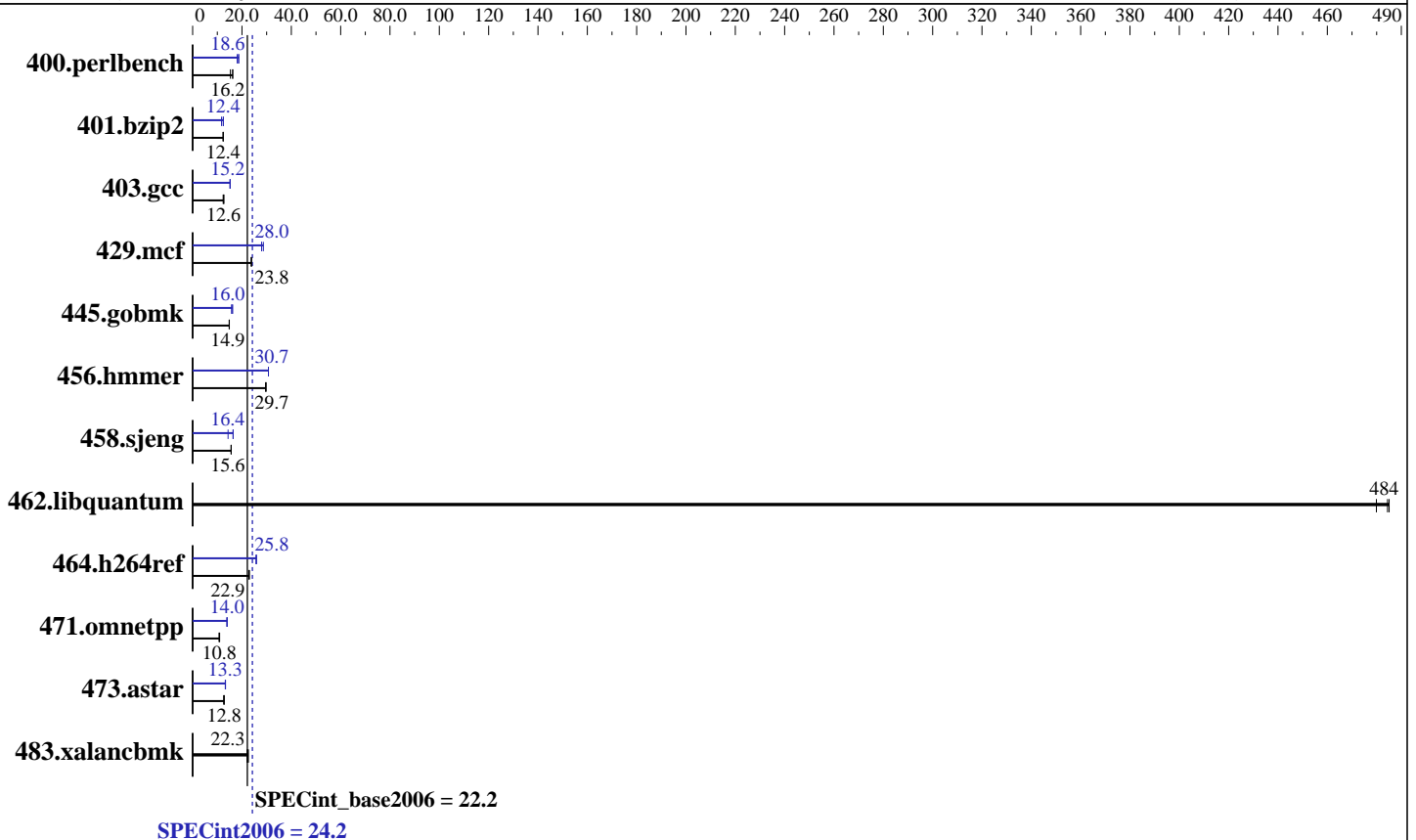
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2010

Hardware Availability: Jun-2010

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E7530  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.13 GHz  
 CPU MHz: 1867  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 4 chips, 6 cores/chip  
 CPU(s) orderable: 2,3,4 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: 512 GB (64x8 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)  
 Disk Subsystem: 1 x SAS, 300 GB, 10000 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: Multi-User Run Level 3  
 Base Pointers: 64-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  | 638         | 15.3        | 601        | 16.3        | <b>603</b> | <b>16.2</b> | 541         | 18.1        | 522        | 18.7        | <b>526</b> | <b>18.6</b> |
| 401.bzip2      | <b>779</b>  | <b>12.4</b> | 778        | 12.4        | 780        | 12.4        | 824         | 11.7        | 774        | 12.5        | <b>778</b> | <b>12.4</b> |
| 403.gcc        | 636         | 12.7        | <b>640</b> | <b>12.6</b> | 651        | 12.4        | 529         | 15.2        | <b>529</b> | <b>15.2</b> | 531        | 15.2        |
| 429.mcf        | <b>382</b>  | <b>23.8</b> | 382        | 23.8        | 383        | 23.8        | <b>326</b>  | <b>28.0</b> | 318        | 28.7        | 326        | 28.0        |
| 445.gobmk      | <b>706</b>  | <b>14.9</b> | 705        | 14.9        | 709        | 14.8        | 665         | 15.8        | 646        | 16.2        | <b>657</b> | <b>16.0</b> |
| 456.hammer     | 315         | 29.6        | <b>314</b> | <b>29.7</b> | 314        | 29.7        | <b>304</b>  | <b>30.7</b> | 304        | 30.7        | 304        | 30.7        |
| 458.sjeng      | <b>775</b>  | <b>15.6</b> | 774        | 15.6        | 776        | 15.6        | <b>738</b>  | <b>16.4</b> | 737        | 16.4        | 843        | 14.4        |
| 462.libquantum | <b>42.8</b> | <b>484</b>  | 42.7       | 485         | 43.2       | 480         | <b>42.8</b> | <b>484</b>  | 42.7       | 485         | 43.2       | 480         |
| 464.h264ref    | <b>966</b>  | <b>22.9</b> | 963        | 23.0        | 973        | 22.8        | 860         | 25.7        | <b>857</b> | <b>25.8</b> | 856        | 25.8        |
| 471.omnetpp    | 581         | 10.8        | <b>579</b> | <b>10.8</b> | 571        | 10.9        | 449         | 13.9        | 447        | 14.0        | <b>448</b> | <b>14.0</b> |
| 473.astar      | 558         | 12.6        | <b>549</b> | <b>12.8</b> | 549        | 12.8        | 527         | 13.3        | <b>529</b> | <b>13.3</b> | 530        | 13.2        |
| 483.xalancbmk  | <b>310</b>  | <b>22.3</b> | 305        | 22.6        | 312        | 22.1        | <b>310</b>  | <b>22.3</b> | 305        | 22.6        | 312        | 22.1        |

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

The system automatically configures the memory to run at 978 MHz.  
BIOS configuration:  
Intel HT Technology = Disable

## 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>  
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64



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## 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 -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`

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## Peak Compiler Invocation (Continued)

471.omnetpp: icpc -m32

## 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: 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

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## Peak Optimization Flags (Continued)

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

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.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-ic11.1-linux64-revE.20100708.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.20100708.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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