



# SPEC® CFP2006 Result

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Fujitsu

**SPECfp®\_rate2006 = 59.5**

PRIMERGY RX200 S5, Intel Xeon E5504, 2.0 GHz

**SPECfp\_rate\_base2006 = 57.6**

CPU2006 license: 19

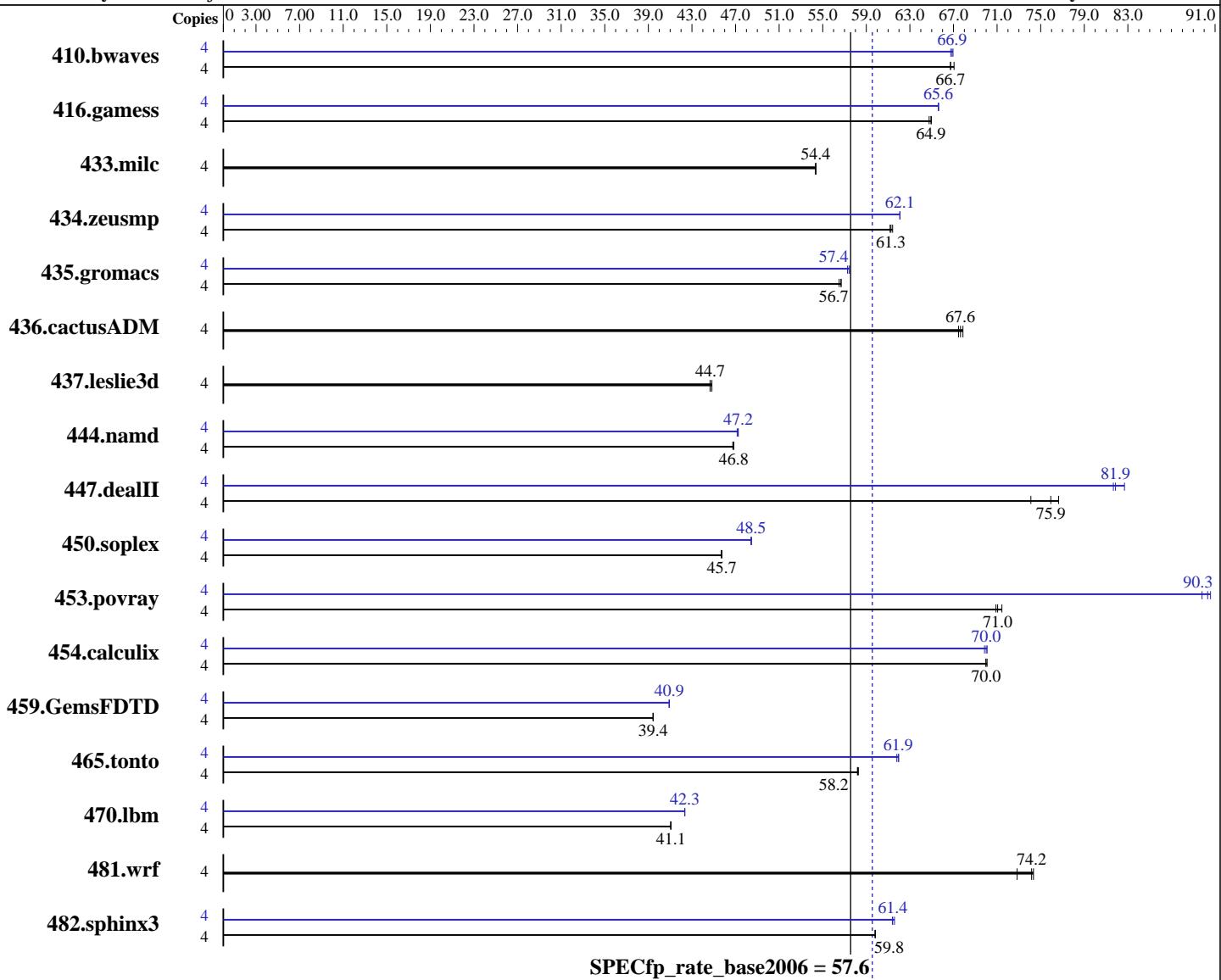
Test date: Aug-2009

Test sponsor: Fujitsu

Hardware Availability: Apr-2009

Tested by: Fujitsu

Software Availability: Feb-2009



**SPECfp\_rate\_base2006 = 57.6**

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## Hardware

CPU Name: Intel Xeon E5504  
CPU Characteristics:  
CPU MHz: 2000  
FPU: Integrated  
CPU(s) enabled: 4 cores, 1 chip, 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

## Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080, l\_cprof\_p\_11.0.080  
Auto Parallel: No  
File System: ext3  
System State: Multi-User Run Level 3  
Base Pointers: 64-bit

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L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6x4 GB PC3-8500R, 2 rank, CL7-7-7, ECC,  
 see add'l detail in notes)  
 Disk Subsystem: 1 x SATA, 250 GB, 7200 RPM  
 Other Hardware: None

Peak Pointers: 32/64-bit  
 Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	815	66.7	811	67.1	<b>815</b>	<b>66.7</b>	4	814	66.8	812	67.0	<b>813</b>	<b>66.9</b>
416.gamess	4	1206	65.0	<b>1206</b>	<b>64.9</b>	1209	64.8	4	1193	65.6	<b>1194</b>	<b>65.6</b>	1194	65.6
433.milc	4	675	54.4	<b>675</b>	<b>54.4</b>	676	54.3	4	675	54.4	<b>675</b>	<b>54.4</b>	676	54.3
434.zeusmp	4	<b>594</b>	<b>61.3</b>	595	61.2	593	61.4	4	586	62.1	586	62.1	<b>586</b>	<b>62.1</b>
435.gromacs	4	<b>504</b>	<b>56.7</b>	504	56.7	505	56.5	4	497	57.5	<b>497</b>	<b>57.4</b>	499	57.3
436.cactusADM	4	709	67.5	704	67.9	<b>707</b>	<b>67.6</b>	4	709	67.5	704	67.9	<b>707</b>	<b>67.6</b>
437.leslie3d	4	839	44.8	<b>841</b>	<b>44.7</b>	842	44.7	4	839	44.8	<b>841</b>	<b>44.7</b>	842	44.7
444.namd	4	685	46.8	686	46.7	<b>685</b>	<b>46.8</b>	4	<b>679</b>	<b>47.2</b>	680	47.2	679	47.2
447.dealII	4	618	74.1	597	76.6	<b>603</b>	<b>75.9</b>	4	553	82.7	<b>559</b>	<b>81.9</b>	560	81.7
450.soplex	4	729	45.8	<b>729</b>	<b>45.7</b>	730	45.7	4	<b>689</b>	<b>48.5</b>	688	48.5	689	48.4
453.povray	4	<b>300</b>	<b>71.0</b>	300	70.9	298	71.4	4	<b>236</b>	<b>90.3</b>	237	89.8	235	90.6
454.calculix	4	472	70.0	471	70.1	<b>472</b>	<b>70.0</b>	4	<b>471</b>	<b>70.0</b>	471	70.1	472	69.8
459.GemsFDTD	4	1076	39.4	<b>1076</b>	<b>39.4</b>	1076	39.4	4	<b>1037</b>	<b>40.9</b>	1038	40.9	1037	40.9
465.tonto	4	675	58.3	676	58.2	<b>676</b>	<b>58.2</b>	4	637	61.8	635	62.0	<b>636</b>	<b>61.9</b>
470.lbm	4	1339	41.0	<b>1338</b>	<b>41.1</b>	1338	41.1	4	1298	42.3	<b>1298</b>	<b>42.3</b>	1298	42.3
481.wrf	4	613	72.8	601	74.3	<b>602</b>	<b>74.2</b>	4	613	72.8	601	74.3	<b>602</b>	<b>74.2</b>
482.sphinx3	4	1303	59.8	1304	59.8	<b>1303</b>	<b>59.8</b>	4	1270	61.4	1266	61.6	<b>1269</b>	<b>61.4</b>

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 800 MHz.

## General Notes

For information about Fujitsu please visit: <http://www.fujitsu.com>



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## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort

## Base Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
  433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
  444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
  465.tonto: -DSPEC_CPU_LP64
  470.lbm: -DSPEC_CPU_LP64
  481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64
```

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -static



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## Peak Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
416.gamess: -DSPEC\_CPU\_LP64  
433.milc: -DSPEC\_CPU\_LP64  
434.zeusmp: -DSPEC\_CPU\_LP64  
435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: -xsse4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

482.sphinx3: -xsse4.2 -ipo -O3 -no-prec-div -static -unroll12

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## Peak Optimization Flags (Continued)

C++ benchmarks:

```
444.namd: -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)
           -fno-alias -auto-ilp32
```

```
447.dealII: -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)
            -unroll12 -ansi-alias -scalar-rep-
```

```
450.soplex: -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)
            -opt-malloc-options=3
```

```
453.povray: -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)
             -unroll14 -ansi-alias
```

Fortran benchmarks:

```
410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

```
416.gamess: -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)
              -unroll12 -Ob0 -ansi-alias -scalar-rep-
```

```
434.zeusmp: -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)
```

```
437.leslie3d: basepeak = yes
```

```
459.GemsFDTD: -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)
                 -unroll12 -Ob0 -opt-prefetch
```

```
465.tonto: -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)
              -unroll14 -auto
```

Benchmarks using both Fortran and C:

```
435.gromacs: -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)
               -opt-prefetch -auto-ilp32
```

```
436.cactusADM: basepeak = yes
```

```
454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
```

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## Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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