



# SPEC® CFP2006 Result

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Fujitsu

PRIMERGY TX200 S5, Intel Xeon L5520, 2.27 GHz

**SPECfp®\_rate2006 = 158**

**SPECfp\_rate\_base2006 = 152**

CPU2006 license: 19

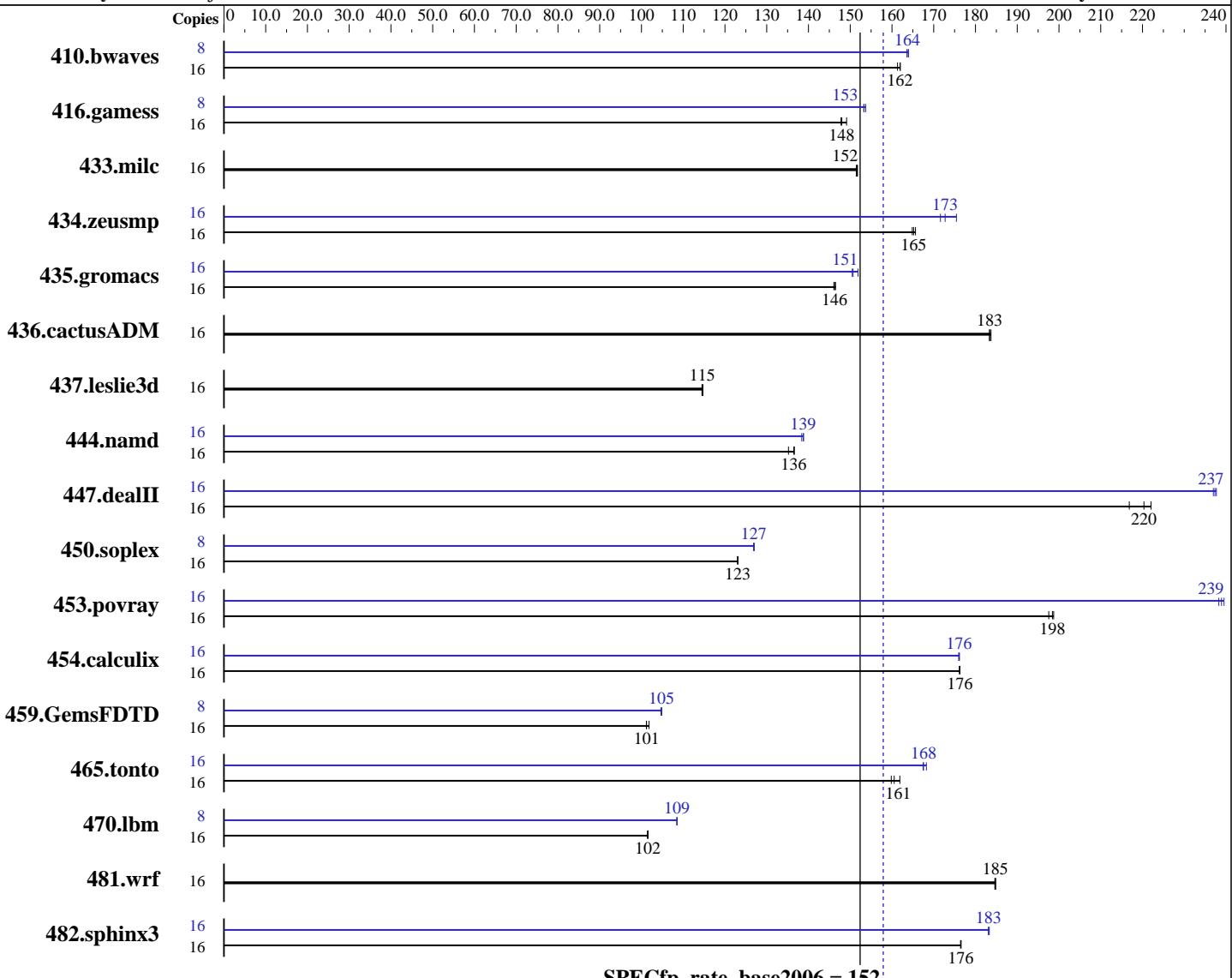
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2009

Hardware Availability: Jun-2009

Software Availability: Feb-2009



## Hardware

CPU Name: Intel Xeon L5520  
CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz  
CPU MHz: 2267  
FPU: Integrated  
CPU(s) enabled: 8 cores, 2 chips, 4 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

## 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, 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	Seconds	Ratio
410.bwaves	16	1348	161	1342	162	<b><u>1343</u></b>	<b><u>162</u></b>	8	665	164	<b><u>664</u></b>	<b><u>164</u></b>	663	164		
416.gamess	16	2101	149	2120	148	<b><u>2117</u></b>	<b><u>148</u></b>	8	1022	153	1019	154	<b><u>1022</u></b>	<b><u>153</u></b>	970	151
433.milc	16	968	152	<b><u>969</u></b>	<b><u>152</u></b>	970	151	16	968	152	<b><u>969</u></b>	<b><u>152</u></b>	970	151	843	173
434.zeusmp	16	879	166	<b><u>881</u></b>	<b><u>165</u></b>	883	165	16	830	175	<b><u>843</u></b>	<b><u>173</u></b>	848	172	781	146
435.gromacs	16	780	146	782	146	<b><u>781</u></b>	<b><u>146</u></b>	16	759	150	<b><u>758</u></b>	<b><u>151</u></b>	752	152	1043	<b><u>183</u></b>
436.cactusADM	16	<b><u>1043</u></b>	<b><u>183</u></b>	1041	184	1043	183	16	<b><u>1043</u></b>	<b><u>183</u></b>	1041	184	1043	183	1312	<b><u>115</u></b>
437.leslie3d	16	1314	114	1311	115	<b><u>1312</u></b>	<b><u>115</u></b>	16	1314	114	1311	115	<b><u>1312</u></b>	<b><u>115</u></b>	939	137
444.namd	16	939	137	<b><u>940</u></b>	<b><u>136</u></b>	949	135	16	<b><u>925</u></b>	<b><u>139</u></b>	927	138	924	139	770	238
447.dealII	16	844	217	824	222	<b><u>831</u></b>	<b><u>220</u></b>	16	770	238	<b><u>771</u></b>	<b><u>237</u></b>	772	237	1085	123
450.soplex	16	1085	123	1084	123	<b><u>1084</u></b>	<b><u>123</u></b>	8	<b><u>526</u></b>	<b><u>127</u></b>	526	127	525	127	429	<b><u>198</u></b>
453.povray	16	431	198	<b><u>429</u></b>	<b><u>198</u></b>	428	199	16	357	238	355	240	<b><u>356</u></b>	<b><u>239</u></b>	749	176
454.calculix	16	749	176	750	176	<b><u>749</u></b>	<b><u>176</u></b>	16	749	176	<b><u>750</u></b>	<b><u>176</u></b>	750	176	1667	102
459.GemsFDTD	16	1667	102	<b><u>1677</u></b>	<b><u>101</u></b>	1678	101	8	811	105	<b><u>810</u></b>	<b><u>105</u></b>	809	105	985	<b><u>160</u></b>
465.tonto	16	985	160	<b><u>981</u></b>	<b><u>161</u></b>	973	162	16	<b><u>940</u></b>	<b><u>168</u></b>	940	167	936	168	2164	102
470.lbm	16	2164	102	<b><u>2165</u></b>	<b><u>102</u></b>	2167	101	8	1013	109	1013	109	<b><u>1013</u></b>	<b><u>109</u></b>	967	185
481.wrf	16	967	185	968	185	<b><u>967</u></b>	<b><u>185</u></b>	16	967	185	968	185	<b><u>967</u></b>	<b><u>185</u></b>	1766	177
482.sphinx3	16	1766	177	1767	176	<b><u>1767</u></b>	<b><u>176</u></b>	16	1701	183	1703	183	<b><u>1703</u></b>	<b><u>183</u></b>	1312	<b><u>115</u></b>

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

## Platform Notes

The system automatically configures the memory to run at 1066 MHz.



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## General Notes

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

## 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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static

## 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:

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## Peak Optimization Flags (Continued)

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 -unroll2

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

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## Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: -xsSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

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.20090710.15.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.20090710.15.xml>

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

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