



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

PRIMERGY TX100 S3p, Intel Xeon E3-1220 v2, 3.10 GHz

SPECfp<sup>®</sup>2006 = 66.7

SPECfp\_base2006 = 64.8

CPU2006 license: 19

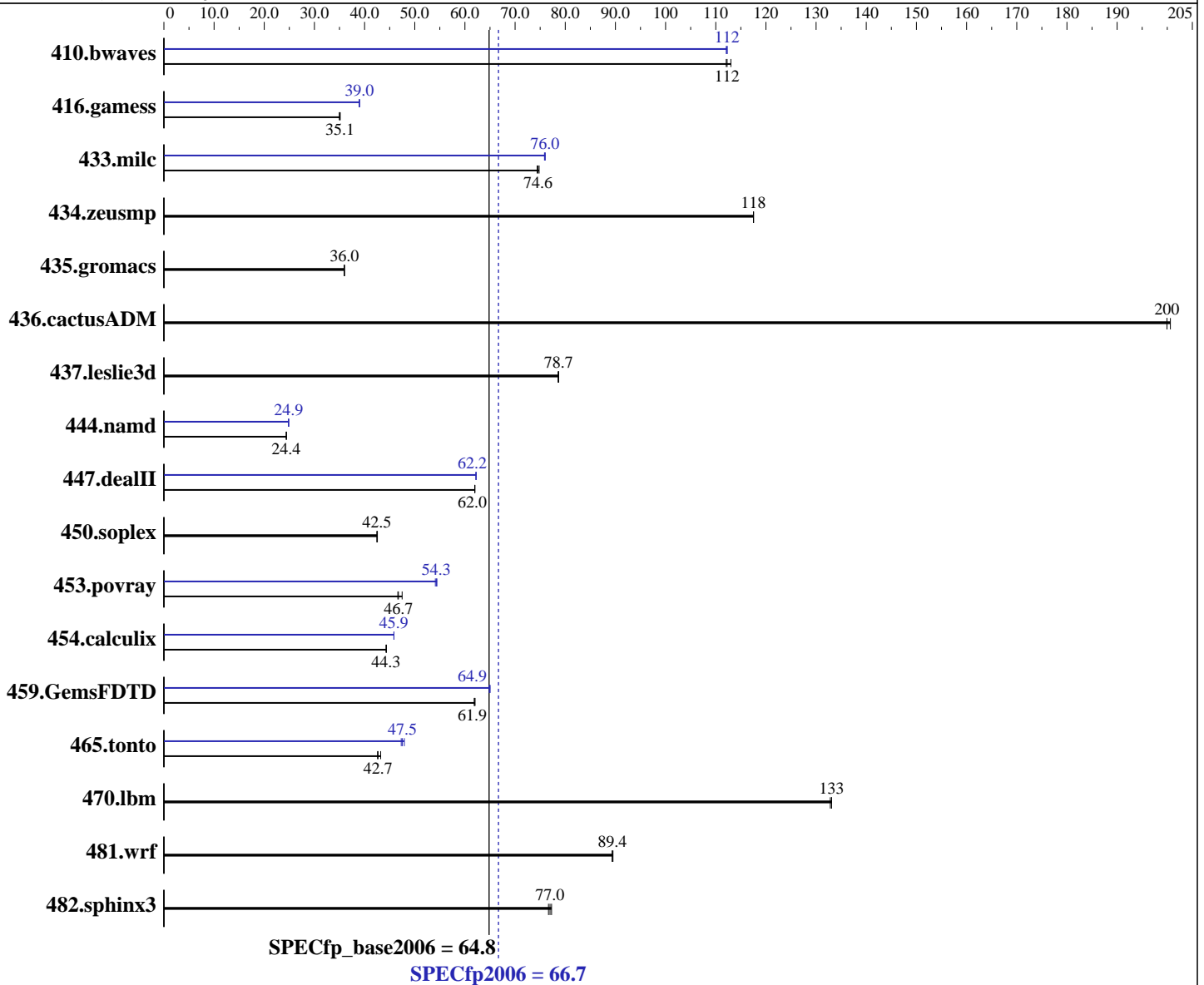
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E3-1220 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.5 GHz  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

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### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)  
Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM  
Other Hardware: None

System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	121	112	<b><u>121</u></b>	<b><u>112</u></b>	120	113	<b><u>121</u></b>	<b><u>112</u></b>	121	112	121	112
416.gamess	558	35.1	560	35.0	<b><u>558</u></b>	<b><u>35.1</u></b>	502	39.0	503	38.9	<b><u>502</u></b>	<b><u>39.0</u></b>
433.milc	<b><u>123</u></b>	<b><u>74.6</u></b>	123	74.8	123	74.4	<b><u>121</u></b>	<b><u>76.0</u></b>	121	75.9	121	76.0
434.zeusmp	77.4	118	<b><u>77.4</u></b>	<b><u>118</u></b>	77.4	118	77.4	118	<b><u>77.4</u></b>	<b><u>118</u></b>	77.4	118
435.gromacs	198	36.0	199	35.9	<b><u>199</u></b>	<b><u>36.0</u></b>	198	36.0	199	35.9	<b><u>199</u></b>	<b><u>36.0</u></b>
436.cactusADM	<b><u>59.8</u></b>	<b><u>200</u></b>	59.6	201	59.8	200	<b><u>59.8</u></b>	<b><u>200</u></b>	59.6	201	59.8	200
437.leslie3d	119	78.7	<b><u>119</u></b>	<b><u>78.7</u></b>	120	78.6	119	78.7	<b><u>119</u></b>	<b><u>78.7</u></b>	120	78.6
444.namd	329	24.4	329	24.4	<b><u>329</u></b>	<b><u>24.4</u></b>	323	24.9	<b><u>323</u></b>	<b><u>24.9</u></b>	323	24.9
447.dealII	185	62.0	<b><u>185</u></b>	<b><u>62.0</u></b>	185	62.0	184	62.2	<b><u>184</u></b>	<b><u>62.2</u></b>	184	62.2
450.soplex	<b><u>196</u></b>	<b><u>42.5</u></b>	196	42.6	196	42.5	<b><u>196</u></b>	<b><u>42.5</u></b>	196	42.6	196	42.5
453.povray	114	46.6	<b><u>114</u></b>	<b><u>46.7</u></b>	112	47.5	98.3	54.1	<b><u>98.0</u></b>	<b><u>54.3</u></b>	97.8	54.4
454.calculix	186	44.3	<b><u>186</u></b>	<b><u>44.3</u></b>	186	44.3	<b><u>180</u></b>	<b><u>45.9</u></b>	180	45.9	180	45.8
459.GemsFDTD	<b><u>171</u></b>	<b><u>61.9</u></b>	171	62.0	171	61.9	164	64.9	163	65.0	<b><u>164</u></b>	<b><u>64.9</u></b>
465.tonto	231	42.6	<b><u>231</u></b>	<b><u>42.7</u></b>	228	43.2	205	47.9	<b><u>207</u></b>	<b><u>47.5</u></b>	208	47.3
470.lbm	<b><u>103</u></b>	<b><u>133</u></b>	103	133	103	133	<b><u>103</u></b>	<b><u>133</u></b>	103	133	103	133
481.wrf	125	89.5	125	89.4	<b><u>125</u></b>	<b><u>89.4</u></b>	125	89.5	125	89.4	<b><u>125</u></b>	<b><u>89.4</u></b>
482.sphinx3	<b><u>253</u></b>	<b><u>77.0</u></b>	252	77.3	254	76.7	<b><u>253</u></b>	<b><u>77.0</u></b>	252	77.3	254	76.7

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

## 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 = "4"

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## General Notes (Continued)

Binaries compiled on a system with 1x E3-1270V2 CPU + 32 GB memory using RHEL6.2  
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

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

## 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:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

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## Base Optimization Flags (Continued)

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias`

## Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias  
-auto-ilp32`

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## Peak Optimization Flags (Continued)

447.deallI: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-ansi-alias

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel  
-static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

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) -prof-use(pass 2) -unroll2  
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc  
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

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.20120320.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>

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