



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

PRIMERGY TX100 S3p, Intel Xeon E3-1240 v2, 3.40 GHz

SPECfp<sup>®</sup>2006 = 70.4

SPECfp\_base2006 = 68.4

CPU2006 license: 19

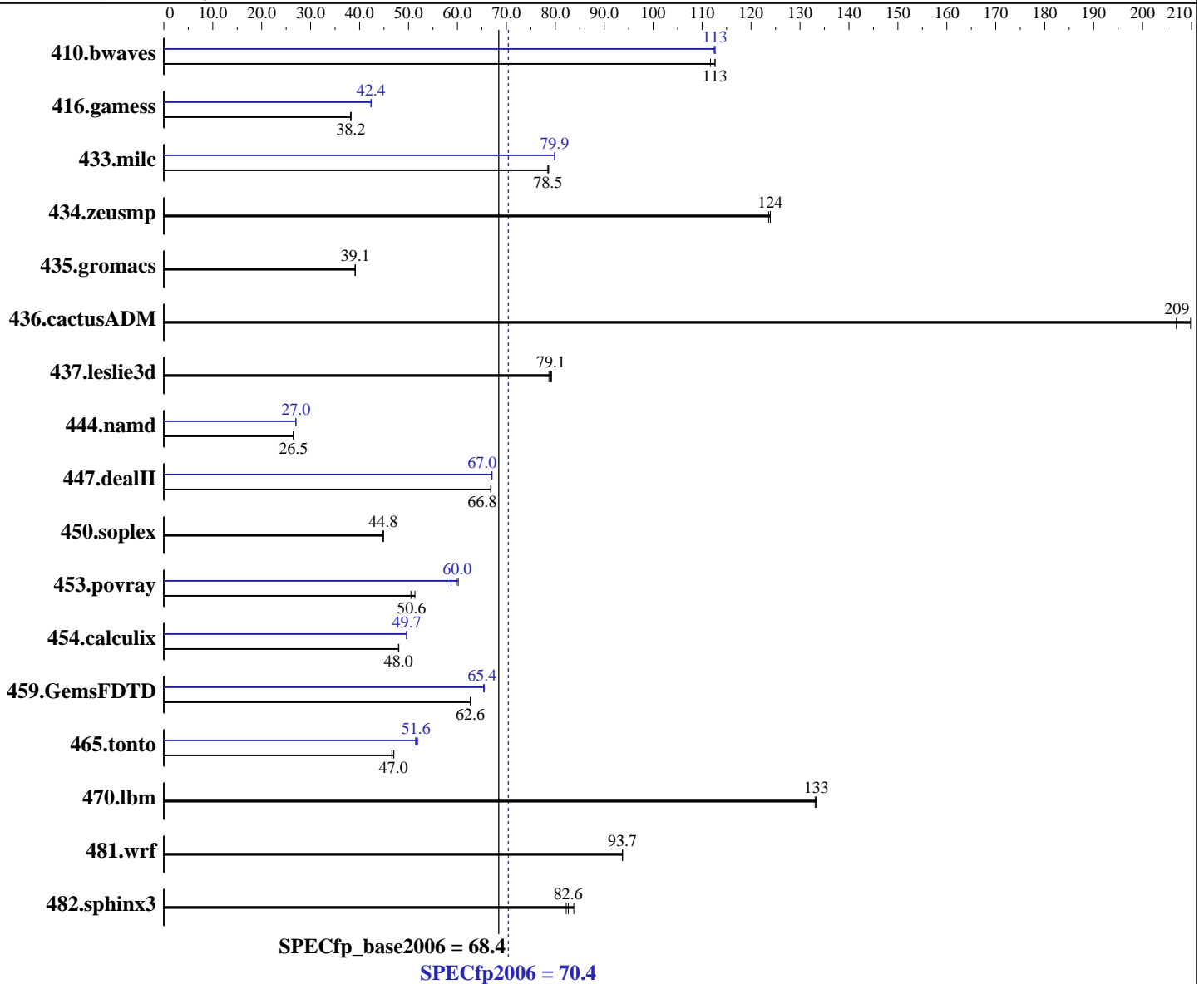
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: May-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E3-1240 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.8 GHz  
 CPU MHz: 3400  
 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	122	112	<b><u>121</u></b>	<b><u>113</u></b>	121	113	<b><u>121</u></b>	113	121	112	<b><u>121</u></b>	<b><u>113</u></b>
416.gamess	512	38.3	513	38.2	<b><u>513</u></b>	<b><u>38.2</u></b>	<b><u>462</u></b>	<b><u>42.4</u></b>	462	42.4	462	42.4
433.milc	117	78.6	117	78.5	<b><u>117</u></b>	<b><u>78.5</u></b>	115	79.9	<b><u>115</u></b>	<b><u>79.9</u></b>	115	79.9
434.zeusmp	<b><u>73.4</u></b>	<b><u>124</u></b>	73.6	124	73.4	124	<b><u>73.4</u></b>	<b><u>124</u></b>	73.6	124	73.4	124
435.gromacs	<b><u>183</u></b>	<b><u>39.1</u></b>	182	39.2	183	39.1	<b><u>183</u></b>	<b><u>39.1</u></b>	182	39.2	183	39.1
436.cactusADM	57.0	210	<b><u>57.2</u></b>	<b><u>209</u></b>	57.8	207	57.0	210	<b><u>57.2</u></b>	<b><u>209</u></b>	57.8	207
437.leslie3d	119	78.7	119	79.2	<b><u>119</u></b>	<b><u>79.1</u></b>	119	78.7	119	79.2	<b><u>119</u></b>	<b><u>79.1</u></b>
444.namd	<b><u>303</u></b>	<b><u>26.5</u></b>	303	26.5	303	26.5	297	27.0	<b><u>297</u></b>	<b><u>27.0</u></b>	297	27.0
447.dealII	171	66.9	171	66.8	<b><u>171</u></b>	<b><u>66.8</u></b>	171	67.1	171	67.0	<b><u>171</u></b>	<b><u>67.0</u></b>
450.soplex	<b><u>186</u></b>	<b><u>44.8</u></b>	186	44.8	186	44.9	<b><u>186</u></b>	<b><u>44.8</u></b>	186	44.8	186	44.9
453.povray	105	50.5	<b><u>105</u></b>	<b><u>50.6</u></b>	104	51.3	88.4	60.2	90.6	58.7	<b><u>88.7</u></b>	<b><u>60.0</u></b>
454.calculix	172	48.0	172	48.0	<b><u>172</u></b>	<b><u>48.0</u></b>	<b><u>166</u></b>	<b><u>49.7</u></b>	166	49.6	166	49.7
459.GemsFDTD	<b><u>169</u></b>	<b><u>62.6</u></b>	169	62.6	169	62.6	<b><u>162</u></b>	<b><u>65.4</u></b>	162	65.5	162	65.4
465.tonto	211	46.6	209	47.0	<b><u>210</u></b>	<b><u>47.0</u></b>	190	51.9	191	51.4	<b><u>191</u></b>	<b><u>51.6</u></b>
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	119	93.7	<b><u>119</u></b>	<b><u>93.7</u></b>	119	93.7	119	93.7	<b><u>119</u></b>	<b><u>93.7</u></b>	119	93.7
482.sphinx3	<b><u>236</u></b>	<b><u>82.6</u></b>	233	83.8	237	82.2	<b><u>236</u></b>	<b><u>82.6</u></b>	233	83.8	237	82.2

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>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml>



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