



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **99.0**

PRIMERGY TX300 S8, Intel Xeon E5-2670 v2, 2.50 GHz

SPECfp\_base2006 = **94.8**

CPU2006 license: 19

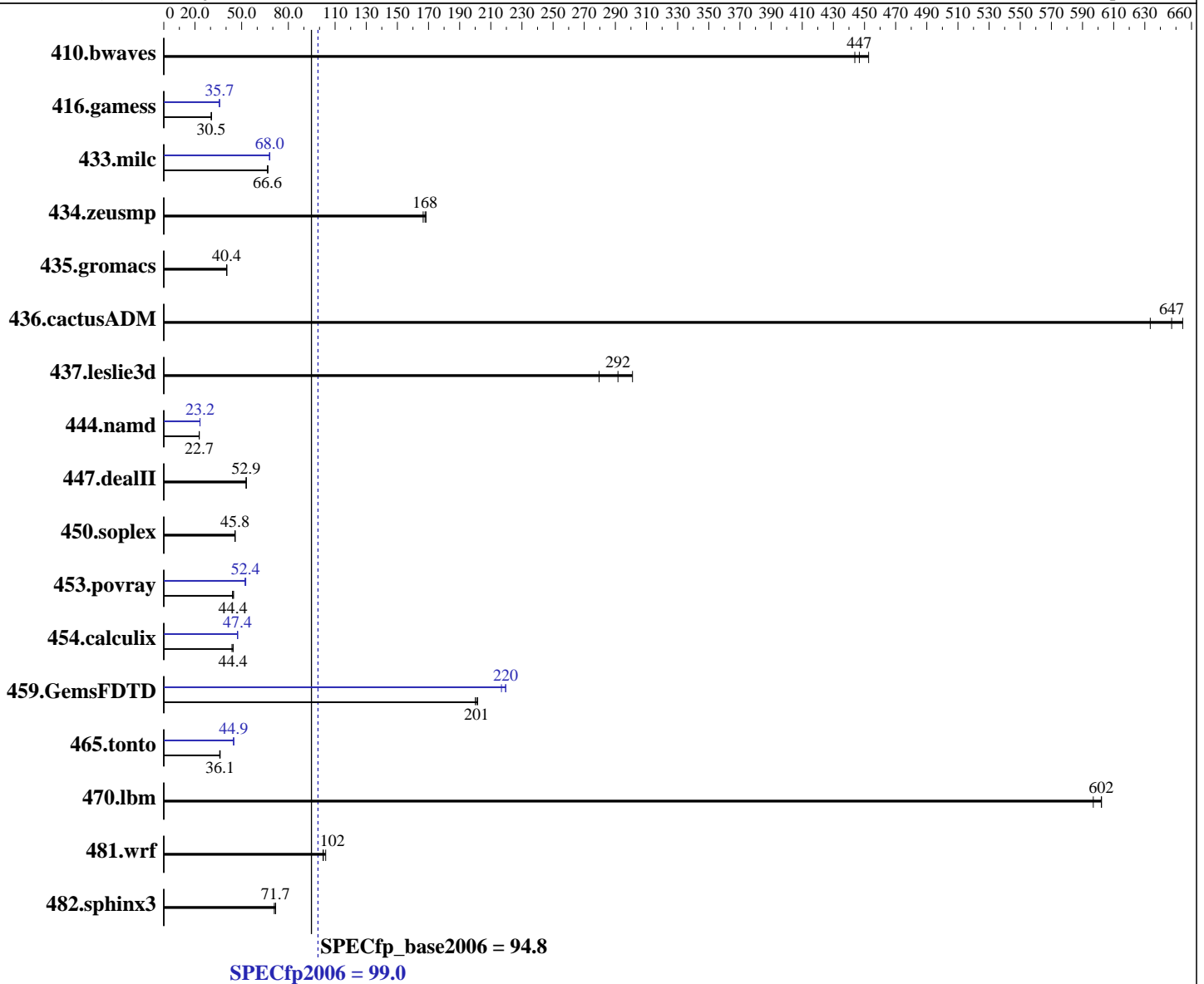
Test date: Sep-2013

Test sponsor: Fujitsu

Hardware Availability: Oct-2013

Tested by: Fujitsu

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2670 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 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

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### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 2.6.32-358.11.1.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

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L3 Cache: 25 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)  
Disk Subsystem: 1 x SATA, 450 GB, 15000 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	30.6	444	<b><u>30.4</u></b>	<b><u>447</u></b>	30.0	453	30.6	444	<b><u>30.4</u></b>	<b><u>447</u></b>	30.0	453
416.gamess	643	30.4	<b><u>642</u></b>	<b><u>30.5</u></b>	638	30.7	548	35.7	<b><u>548</u></b>	<b><u>35.7</u></b>	547	35.8
433.milc	137	66.9	138	66.6	<b><u>138</u></b>	<b><u>66.6</u></b>	135	67.8	135	68.1	<b><u>135</u></b>	<b><u>68.0</u></b>
434.zeusmp	54.6	167	54.0	168	<b><u>54.2</u></b>	<b><u>168</u></b>	54.6	167	54.0	168	<b><u>54.2</u></b>	<b><u>168</u></b>
435.gromacs	<b><u>177</u></b>	<b><u>40.4</u></b>	177	40.4	176	40.5	<b><u>177</u></b>	<b><u>40.4</u></b>	177	40.4	176	40.5
436.cactusADM	18.3	654	<b><u>18.5</u></b>	<b><u>647</u></b>	18.9	633	18.3	654	<b><u>18.5</u></b>	<b><u>647</u></b>	18.9	633
437.leslie3d	31.2	301	<b><u>32.2</u></b>	<b><u>292</u></b>	33.6	280	31.2	301	<b><u>32.2</u></b>	<b><u>292</u></b>	33.6	280
444.namd	353	22.7	<b><u>353</u></b>	<b><u>22.7</u></b>	352	22.8	345	23.2	345	23.2	<b><u>345</u></b>	<b><u>23.2</u></b>
447.dealII	216	52.9	<b><u>216</u></b>	<b><u>52.9</u></b>	216	53.0	216	52.9	<b><u>216</u></b>	<b><u>52.9</u></b>	216	53.0
450.soplex	183	45.7	182	45.8	<b><u>182</u></b>	<b><u>45.8</u></b>	183	45.7	182	45.8	<b><u>182</u></b>	<b><u>45.8</u></b>
453.povray	121	44.1	119	44.8	<b><u>120</u></b>	<b><u>44.4</u></b>	102	52.2	101	52.6	<b><u>101</u></b>	<b><u>52.4</u></b>
454.calculix	188	43.8	185	44.5	<b><u>186</u></b>	<b><u>44.4</u></b>	174	47.4	174	47.3	<b><u>174</u></b>	<b><u>47.4</u></b>
459.GemsFDTD	<b><u>52.8</u></b>	<b><u>201</u></b>	52.6	202	53.0	200	<b><u>48.3</u></b>	<b><u>220</u></b>	48.3	220	48.9	217
465.tonto	274	35.9	<b><u>273</u></b>	<b><u>36.1</u></b>	272	36.2	220	44.8	219	44.9	<b><u>219</u></b>	<b><u>44.9</u></b>
470.lbm	<b><u>22.8</u></b>	<b><u>602</u></b>	22.8	602	23.0	597	<b><u>22.8</u></b>	<b><u>602</u></b>	22.8	602	23.0	597
481.wrf	109	102	107	104	<b><u>109</u></b>	<b><u>102</u></b>	109	102	107	104	<b><u>109</u></b>	<b><u>102</u></b>
482.sphinx3	275	70.9	<b><u>272</u></b>	<b><u>71.7</u></b>	271	71.8	275	70.9	<b><u>272</u></b>	<b><u>71.7</u></b>	271	71.8

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:  
Energy Performance = Performance  
Utilization Profile = Unbalanced

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact,1,0"  
LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"

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### General Notes (Continued)

OMP\_NUM\_THREADS = "20"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

This result was measured on the PRIMERGY RX350 S8. The PRIMERGY RX350 S8 and the PRIMERGY TX300 S8 are electronically equivalent.

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.deallI: -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



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## Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -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) -auto-ilp32  
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

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## Peak Optimization Flags (Continued)

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

447.dealIII: basepeak = yes

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: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -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 -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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

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

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