



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **92.7**

PRIMERGY TX300 S7, Intel Xeon E5-2690, 2.90 GHz

SPECfp\_base2006 = **86.6**

CPU2006 license: 19

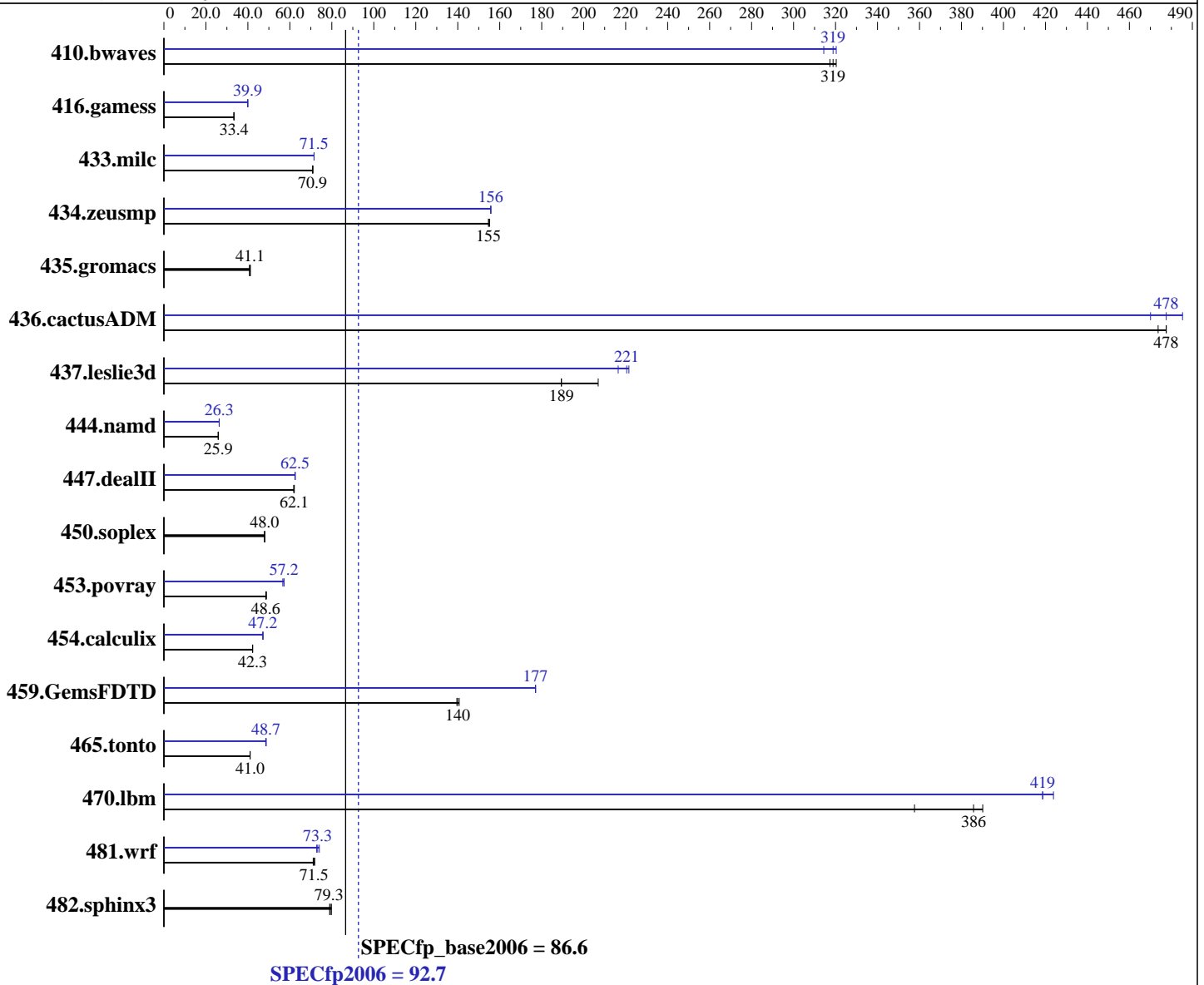
Test date: Feb-2012

Test sponsor: Fujitsu

Hardware Availability: Mar-2012

Tested by: Fujitsu

Software Availability: Feb-2012



**Hardware**

CPU Name: Intel Xeon E5-2690  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 2900  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 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

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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 12.1.2.273 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.2.273 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3L-12800R-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	<b>42.6</b>	<b>319</b>	42.8	317	42.4	320	43.2	314	<b>42.6</b>	<b>319</b>	42.4	320
416.gamess	587	33.4	586	33.4	<b>587</b>	<b>33.4</b>	491	39.9	490	40.0	<b>490</b>	<b>39.9</b>
433.milc	129	71.0	130	70.9	<b>130</b>	<b>70.9</b>	128	71.6	<b>128</b>	<b>71.5</b>	128	71.5
434.zeusmp	<b>58.8</b>	<b>155</b>	58.6	155	58.8	155	<b>58.4</b>	<b>156</b>	58.4	156	58.4	156
435.gromacs	174	41.2	175	40.7	<b>174</b>	<b>41.1</b>	174	41.2	175	40.7	<b>174</b>	<b>41.1</b>
436.cactusADM	<b>25.0</b>	<b>478</b>	25.0	478	25.2	474	<b>25.0</b>	<b>478</b>	25.4	470	24.6	485
437.leslie3d	<b>49.6</b>	<b>189</b>	45.4	207	49.6	189	43.4	216	<b>42.6</b>	<b>221</b>	42.4	222
444.namd	310	25.9	310	25.9	<b>310</b>	<b>25.9</b>	304	26.4	305	26.3	<b>304</b>	<b>26.3</b>
447.dealII	184	62.1	185	61.8	<b>184</b>	<b>62.1</b>	<b>183</b>	<b>62.5</b>	183	62.5	183	62.5
450.soplex	174	48.0	<b>174</b>	<b>48.0</b>	174	48.0	174	48.0	<b>174</b>	<b>48.0</b>	174	48.0
453.povray	<b>110</b>	<b>48.6</b>	110	48.6	109	48.9	93.9	56.6	<b>93.1</b>	<b>57.2</b>	92.9	57.2
454.calculix	195	42.3	195	42.2	<b>195</b>	<b>42.3</b>	<b>175</b>	<b>47.2</b>	175	47.2	175	47.1
459.GemsFDTD	75.4	141	<b>75.8</b>	<b>140</b>	76.0	140	59.9	177	<b>59.9</b>	<b>177</b>	59.9	177
465.tonto	240	41.1	240	41.0	<b>240</b>	<b>41.0</b>	<b>202</b>	<b>48.7</b>	203	48.5	202	48.7
470.lbm	<b>35.6</b>	<b>386</b>	35.2	390	38.4	358	<b>32.8</b>	<b>419</b>	32.8	419	32.4	424
481.wrf	<b>156</b>	<b>71.5</b>	155	71.9	157	71.1	151	74.1	153	72.8	<b>152</b>	<b>73.3</b>
482.sphinx3	<b>246</b>	<b>79.3</b>	247	79.0	244	79.8	<b>246</b>	<b>79.3</b>	247	79.0	244	79.8

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.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS configuration:  
 Intel HT Technology = Disable  
 Frequency Floor Override = Enable



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## 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 = "16"
```

Binaries compiled on a system with 2x Intel Xeon E5-2690 CPU + 64GB Memory using Red Hat Enterprise Linux Server release 6.1 (Santiago)  
Added glibc-static-2.12-1.25.el6.x86\_64.rpm to enable static linking

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

This result was measured on the PRIMERGY RX350 S7. The PRIMERGY RX350 S7 and the PRIMERGY TX300 S7 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.lelie3d: -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
```

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## Base Portability Flags (Continued)

482.sphinx3: -DSPEC\_CPU\_LP64

## Base Optimization Flags

C benchmarks:

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

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

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## Peak Optimization Flags (Continued)

470.lbm: -xAVX -ipo -O3 -no-prec-div -static -parallel  
-opt-prefetch -ansi-alias

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

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

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

437.leslie3d: Same as 434.zeusmp

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

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## Peak Optimization Flags (Continued)

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

481.wrf: Same as 436.cactusADM

The flags files that were used to format this result can be browsed at

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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