



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **81.7**

PRIMERGY RX200 S7, Intel Xeon E5-2643, 3.30 GHz

SPECfp\_base2006 = **78.3**

CPU2006 license: 19

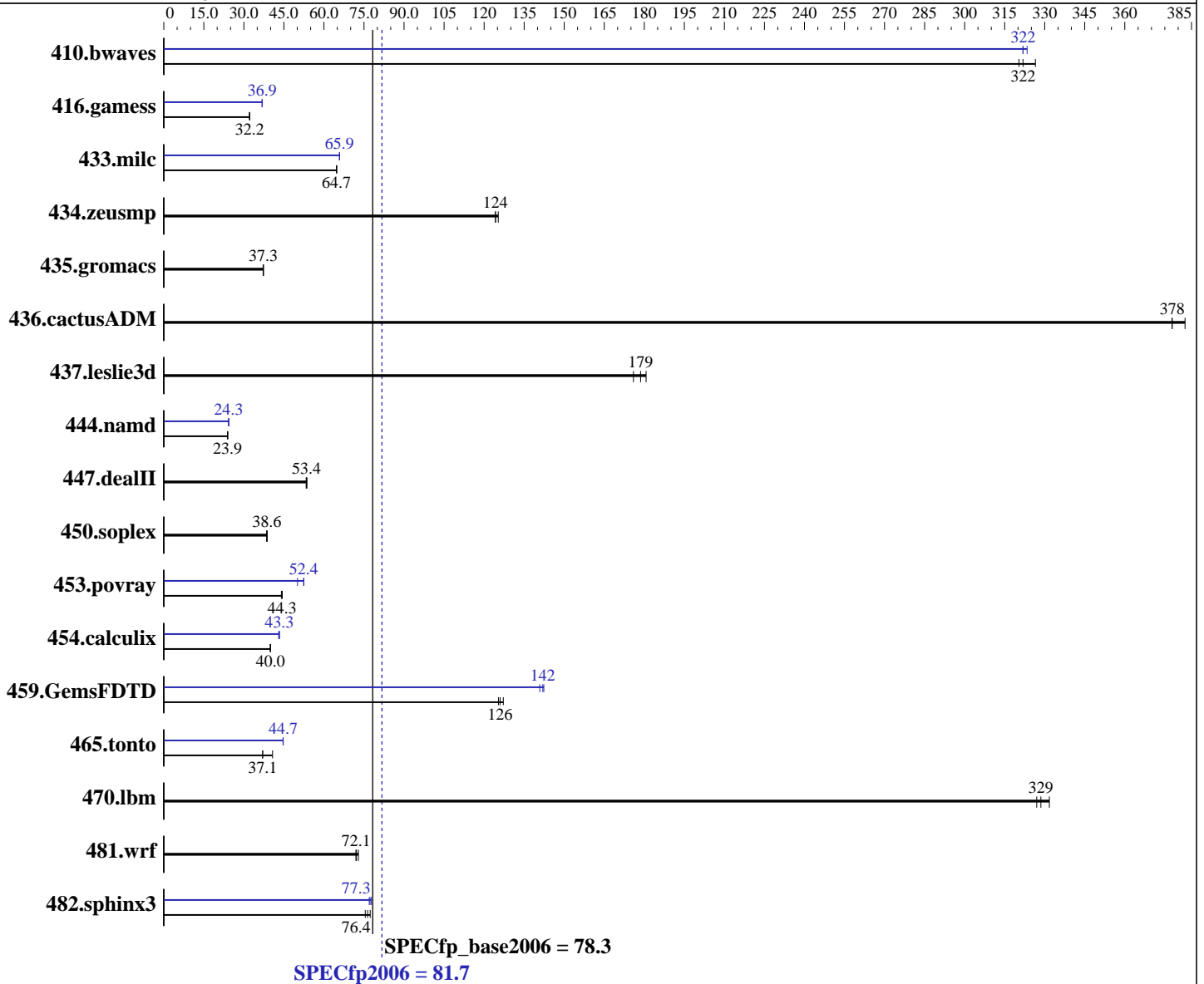
Test date: Feb-2012

Test sponsor: Fujitsu

Hardware Availability: Mar-2012

Tested by: Fujitsu

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2643  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

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L3 Cache: 10 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	42.4	320	41.6	327	<b><u>42.2</u></b>	<b><u>322</u></b>	42.2	322	<b><u>42.2</u></b>	<b><u>322</u></b>	42.0	323
416.gamess	<b><u>608</u></b>	<b><u>32.2</u></b>	611	32.0	608	32.2	532	36.8	531	36.9	<b><u>531</u></b>	<b><u>36.9</u></b>
433.milc	<b><u>142</u></b>	<b><u>64.7</u></b>	142	64.8	142	64.7	139	65.9	<b><u>139</u></b>	<b><u>65.9</u></b>	140	65.8
434.zeusmp	72.6	125	<b><u>73.2</u></b>	<b><u>124</u></b>	73.2	124	72.6	125	<b><u>73.2</u></b>	<b><u>124</u></b>	73.2	124
435.gromacs	191	37.3	192	37.2	<b><u>191</u></b>	<b><u>37.3</u></b>	191	37.3	192	37.2	<b><u>191</u></b>	<b><u>37.3</u></b>
436.cactusADM	<b><u>31.6</u></b>	<b><u>378</u></b>	31.2	383	31.6	378	<b><u>31.6</u></b>	<b><u>378</u></b>	31.2	383	31.6	378
437.leslie3d	53.4	176	52.0	181	<b><u>52.6</u></b>	<b><u>179</u></b>	53.4	176	52.0	181	<b><u>52.6</u></b>	<b><u>179</u></b>
444.namd	335	23.9	335	23.9	<b><u>335</u></b>	<b><u>23.9</u></b>	330	24.3	<b><u>330</u></b>	<b><u>24.3</u></b>	330	24.3
447.dealII	213	53.6	215	53.3	<b><u>214</u></b>	<b><u>53.4</u></b>	213	53.6	215	53.3	<b><u>214</u></b>	<b><u>53.4</u></b>
450.soplex	215	38.7	216	38.6	<b><u>216</u></b>	<b><u>38.6</u></b>	215	38.7	216	38.6	<b><u>216</u></b>	<b><u>38.6</u></b>
453.povray	120	44.4	121	44.0	<b><u>120</u></b>	<b><u>44.3</u></b>	101	52.5	<b><u>102</u></b>	<b><u>52.4</u></b>	106	50.1
454.calculix	207	39.8	<b><u>206</u></b>	<b><u>40.0</u></b>	206	40.0	192	43.0	191	43.3	<b><u>191</u></b>	<b><u>43.3</u></b>
459.GemsFDTD	84.6	125	<b><u>84.2</u></b>	<b><u>126</u></b>	83.4	127	74.5	142	<b><u>74.7</u></b>	<b><u>142</u></b>	75.3	141
465.tonto	<b><u>266</u></b>	<b><u>37.1</u></b>	266	37.0	242	40.7	220	44.7	220	44.7	<b><u>220</u></b>	<b><u>44.7</u></b>
470.lbm	41.4	332	<b><u>41.8</u></b>	<b><u>329</u></b>	42.0	327	41.4	332	<b><u>41.8</u></b>	<b><u>329</u></b>	42.0	327
481.wrf	155	72.0	153	72.9	<b><u>155</u></b>	<b><u>72.1</u></b>	155	72.0	153	72.9	<b><u>155</u></b>	<b><u>72.1</u></b>
482.sphinx3	252	77.3	<b><u>255</u></b>	<b><u>76.4</u></b>	258	75.5	253	77.0	251	77.8	<b><u>252</u></b>	<b><u>77.3</u></b>

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  
Frequency Floor Override = Enable

## 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"

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## General Notes (Continued)

OMP\_NUM\_THREADS = "8"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
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: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel`

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## Peak Optimization Flags (Continued)

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: 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: -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: -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/Fujitsu-Platform.20120320.html>

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



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

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