



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

### SPECfp<sup>®</sup>\_rate2006 = 243

PRIMERGY RX200 S7, Intel Xeon E5-2670, 2.60 GHz

### SPECfp\_rate\_base2006 = 236

CPU2006 license: 19

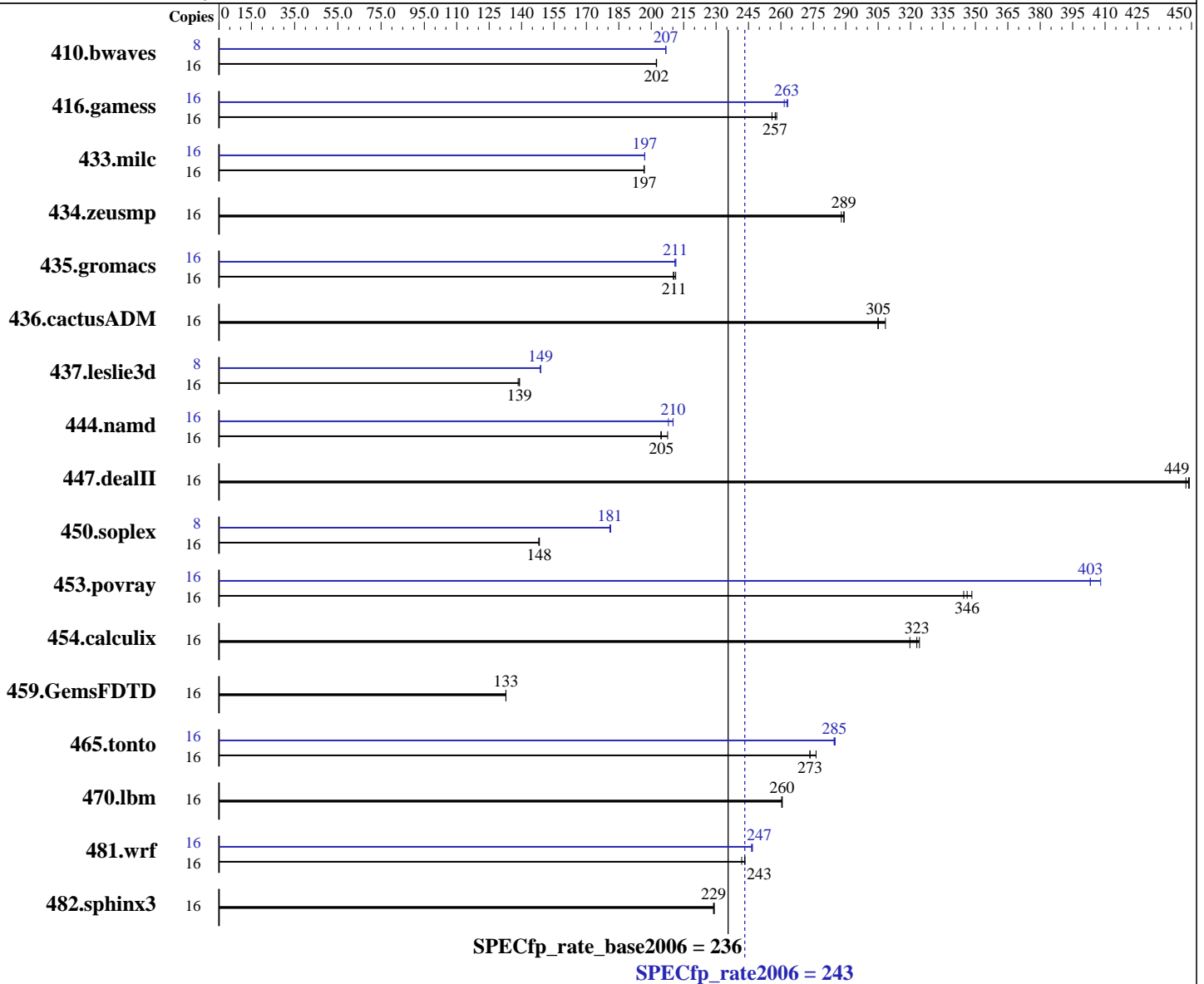
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2670  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 1 chip, 8 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 6.2 (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: No  
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 64 GB (8 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: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1074	202	1075	202	<b><u>1074</u></b>	<b><u>202</u></b>	8	<b><u>526</u></b>	<b><u>207</u></b>	526	207	526	207
416.gamess	16	1214	258	1224	256	<b><u>1217</u></b>	<b><u>257</u></b>	16	1198	262	<b><u>1192</u></b>	<b><u>263</u></b>	1190	263
433.milc	16	746	197	<b><u>747</u></b>	<b><u>197</u></b>	747	197	16	<b><u>746</u></b>	<b><u>197</u></b>	746	197	746	197
434.zeusmp	16	<b><u>504</u></b>	<b><u>289</u></b>	503	289	506	288	16	<b><u>504</u></b>	<b><u>289</u></b>	503	289	506	288
435.gromacs	16	541	211	543	210	<b><u>542</u></b>	<b><u>211</u></b>	16	<b><u>541</u></b>	<b><u>211</u></b>	540	211	541	211
436.cactusADM	16	620	308	627	305	<b><u>627</u></b>	<b><u>305</u></b>	16	620	308	627	305	<b><u>627</u></b>	<b><u>305</u></b>
437.leslie3d	16	1087	138	1082	139	<b><u>1082</u></b>	<b><u>139</u></b>	8	506	149	<b><u>505</u></b>	<b><u>149</u></b>	505	149
444.namd	16	<b><u>627</u></b>	<b><u>205</u></b>	618	208	628	204	16	611	210	<b><u>611</u></b>	<b><u>210</u></b>	617	208
447.dealII	16	408	449	409	447	<b><u>408</u></b>	<b><u>449</u></b>	16	408	449	409	447	<b><u>408</u></b>	<b><u>449</u></b>
450.soplex	16	<b><u>901</u></b>	<b><u>148</u></b>	900	148	902	148	8	368	181	369	181	<b><u>369</u></b>	<b><u>181</u></b>
453.povray	16	247	345	<b><u>246</u></b>	<b><u>346</u></b>	244	348	16	211	403	209	408	<b><u>211</u></b>	<b><u>403</u></b>
454.calculix	16	407	324	413	320	<b><u>409</u></b>	<b><u>323</u></b>	16	407	324	413	320	<b><u>409</u></b>	<b><u>323</u></b>
459.GemsFDTD	16	<b><u>1279</u></b>	<b><u>133</u></b>	1278	133	1279	133	16	<b><u>1279</u></b>	<b><u>133</u></b>	1278	133	1279	133
465.tonto	16	570	276	<b><u>576</u></b>	<b><u>273</u></b>	576	273	16	<b><u>553</u></b>	<b><u>285</u></b>	553	285	552	285
470.lbm	16	<b><u>844</u></b>	<b><u>260</u></b>	843	261	844	260	16	<b><u>844</u></b>	<b><u>260</u></b>	843	261	844	260
481.wrf	16	734	243	739	242	<b><u>735</u></b>	<b><u>243</u></b>	16	724	247	<b><u>724</u></b>	<b><u>247</u></b>	725	246
482.sphinx3	16	1361	229	1363	229	<b><u>1362</u></b>	<b><u>229</u></b>	16	1361	229	1363	229	<b><u>1362</u></b>	<b><u>229</u></b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

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## General Notes (Continued)

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  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>  
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 -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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.dealII: -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

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## Peak Portability Flags (Continued)

481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
482.sphinx3: -DSPEC\_CPU\_LP64

## 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  
-opt-mem-layout-trans=3

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

447.dealII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: basepeak = yes

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

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## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-static -auto-ilp32 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-mem-layout-trans=3

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

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