



# SPEC® CFP2006 Result

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## Fujitsu

PRIMERGY RX100 S7p, Intel Xeon E3-1280 v2, 3.60 GHz

SPECfp®\_rate2006 = 140

SPECfp\_rate\_base2006 = 136

CPU2006 license: 19

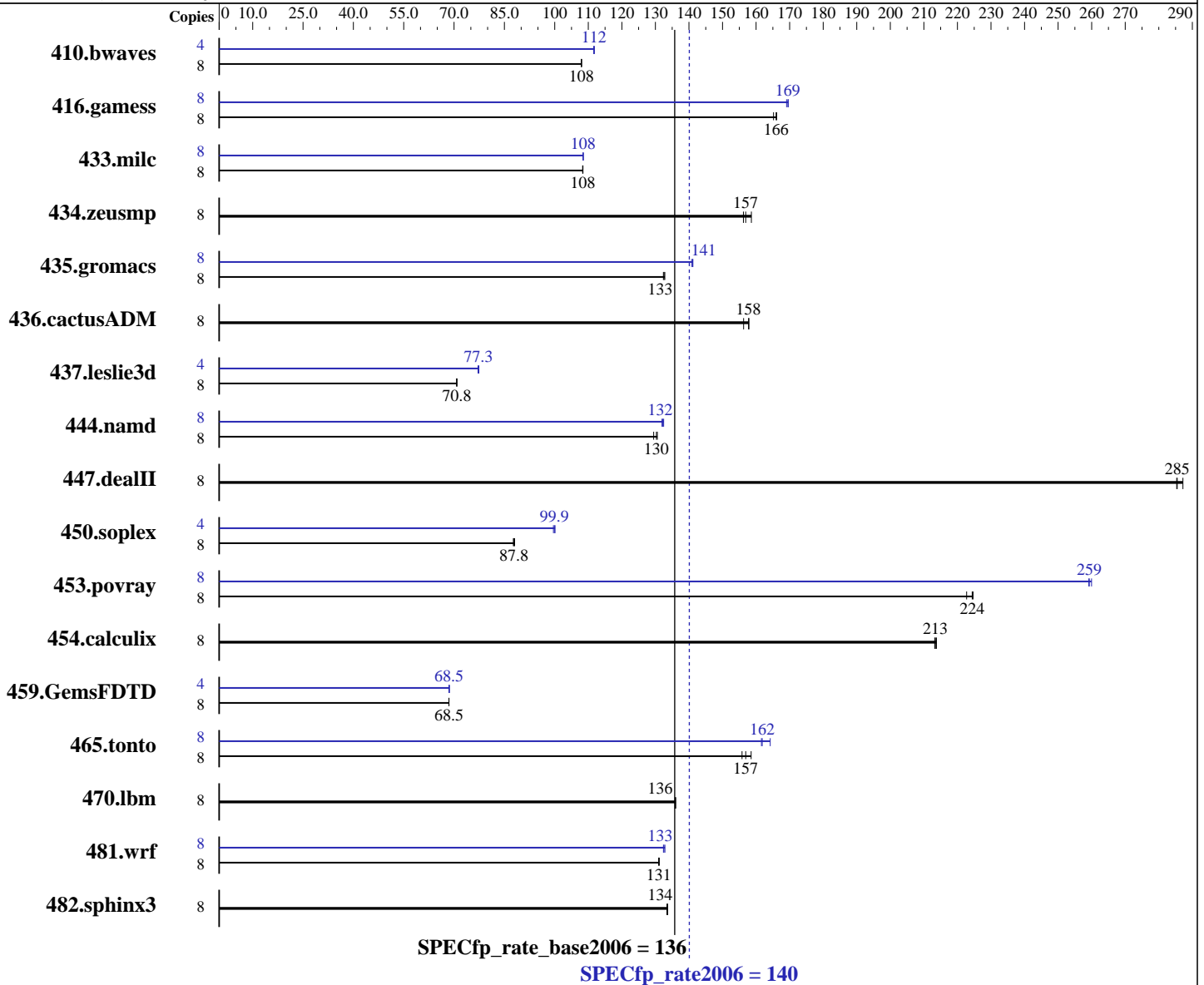
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E3-1280 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.0 GHz  
 CPU MHz: 3600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 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: No  
 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: 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	8	1007	108	<b><u>1007</u></b>	<b><u>108</u></b>	1007	108	4	487	112	486	112	<b><u>487</u></b>	<b><u>112</u></b>
416.gamess	8	943	166	948	165	<b><u>944</u></b>	<b><u>166</u></b>	8	926	169	924	170	<b><u>924</u></b>	<b><u>169</u></b>
433.milc	8	677	108	678	108	<b><u>678</u></b>	<b><u>108</u></b>	8	<b><u>677</u></b>	<b><u>108</u></b>	677	109	677	108
434.zeusmp	8	<b><u>464</u></b>	<b><u>157</u></b>	459	159	466	156	8	<b><u>464</u></b>	<b><u>157</u></b>	459	159	466	156
435.gromacs	8	430	133	431	132	<b><u>431</u></b>	<b><u>133</u></b>	8	<b><u>405</u></b>	<b><u>141</u></b>	406	141	405	141
436.cactusADM	8	606	158	612	156	<b><u>606</u></b>	<b><u>158</u></b>	8	606	158	612	156	<b><u>606</u></b>	<b><u>158</u></b>
437.leslie3d	8	1063	70.8	1062	70.8	<b><u>1062</u></b>	<b><u>70.8</u></b>	4	486	77.4	<b><u>487</u></b>	<b><u>77.3</u></b>	487	77.2
444.namd	8	491	131	<b><u>492</u></b>	<b><u>130</u></b>	496	129	8	486	132	484	132	<b><u>485</u></b>	<b><u>132</u></b>
447.dealII	8	319	287	321	285	<b><u>321</u></b>	<b><u>285</u></b>	8	319	287	321	285	<b><u>321</u></b>	<b><u>285</u></b>
450.soplex	8	<b><u>760</u></b>	<b><u>87.8</u></b>	761	87.7	758	88.0	4	335	99.6	<b><u>334</u></b>	<b><u>99.9</u></b>	333	100
453.povray	8	189	225	191	223	<b><u>190</u></b>	<b><u>224</u></b>	8	<b><u>164</u></b>	<b><u>259</u></b>	164	260	164	259
454.calculix	8	310	213	<b><u>309</u></b>	<b><u>213</u></b>	309	214	8	310	213	<b><u>309</u></b>	<b><u>213</u></b>	309	214
459.GemsFDTD	8	1240	68.5	<b><u>1240</u></b>	<b><u>68.5</u></b>	1239	68.5	4	619	68.6	619	68.5	<b><u>619</u></b>	<b><u>68.5</u></b>
465.tonto	8	505	156	497	159	<b><u>502</u></b>	<b><u>157</u></b>	8	<b><u>486</u></b>	<b><u>162</u></b>	487	162	479	164
470.lbm	8	809	136	<b><u>808</u></b>	<b><u>136</u></b>	808	136	8	809	136	<b><u>808</u></b>	<b><u>136</u></b>	808	136
481.wrf	8	682	131	<b><u>682</u></b>	<b><u>131</u></b>	681	131	8	673	133	675	132	<b><u>674</u></b>	<b><u>133</u></b>
482.sphinx3	8	<b><u>1167</u></b>	<b><u>134</u></b>	1166	134	1169	133	8	<b><u>1167</u></b>	<b><u>134</u></b>	1166	134	1169	133

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 2x E5-2650 CPU + 96 GB memory using RHEL6.2  
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.leslie3d: -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  
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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## Peak Portability Flags (Continued)

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.dealIII: 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: -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

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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-p32 -ansi-alias -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/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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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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