**SPEC® CFP2006 Result**

**Fujitsu**

PRIMERGY TX300 S7, Intel Xeon E5-2643, 3.30 GHz

**SPECfp®_rate2006 = 168**

**SPECfp_rate_base2006 = 163**

**CPU2006 license:** 19  
**Test sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test date:** Feb-2012

**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:** 4 cores, 1 chip, 4 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

**Software**

- **Operating System:** Red Hat Enterprise Linux Server release 6.2 (Santiago)
- **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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**Copies**

| Benchmark | Copies | 10.0 | 20.0 | 30.0 | 40.0 | 50.0 | 60.0 | 70.0 | 80.0 | 90.0 | 100.0 | 110.0 | 120.0 | 130.0 | 140.0 | 150.0 | 160.0 | 170.0 | 180.0 | 190.0 | 200.0 | 210.0 | 220.0 | 230.0 | 240.0 | 250.0 | 260.0 | 270.0 | 280.0 | 290.0 | 300.0 |
|-----------|--------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 410.bwaves | 8      | 177  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 416.gamess  | 8      | 149  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 433.milc   | 8      | 182  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 434.zeusmp | 8      | 182  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 435.gromacs| 8      | 179  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 436.cactusADM | 8 | 193  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 437.leslie3d| 8      | 133  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 444.namd   | 8      | 118  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 447.dealII | 8      | 258  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 450.soplex | 8      | 123  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 453.povray | 8      | 236  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 454.calculix| 8     | 201  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 459.GemsFDTD| 8      | 190  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 465.tonto  | 8      | 108  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 470.lbm    | 8      | 174  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 481.wrf    | 8      | 159  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 482.sphinx3| 8      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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# SPEC CFP2006 Result

## Fujitsu

**PRIMERGY TX300 S7, Intel Xeon E5-2643, 3.30 GHz**

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>Test date:</th>
<th>Test sponsor:</th>
<th>Hardware Availability:</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Feb-2012</td>
<td>Fujitsu</td>
<td>Mar-2012</td>
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<tr>
<th>Tested by:</th>
<th>Software Availability:</th>
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<tr>
<td>Fujitsu</td>
<td>Dec-2011</td>
</tr>
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<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>System State:</th>
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</thead>
<tbody>
<tr>
<td>10 MB I+D on chip per chip</td>
<td>Run level 3 (multi-user)</td>
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</table>

<table>
<thead>
<tr>
<th>Other Cache:</th>
<th>Base Pointers:</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td>32/64-bit</td>
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<table>
<thead>
<tr>
<th>Memory:</th>
<th>Peak Pointers:</th>
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</thead>
<tbody>
<tr>
<td>64 GB (8 x 8 GB 2Rx4 PC3L-12800R-11, ECC)</td>
<td>32/64-bit</td>
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</table>

<table>
<thead>
<tr>
<th>Disk Subsystem:</th>
<th>Other Software:</th>
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</thead>
<tbody>
<tr>
<td>1 x SATA, 500 GB, 7200 RPM</td>
<td>None</td>
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</tbody>
</table>

| Other Hardware: | |
|-----------------| |
| None            | |

<table>
<thead>
<tr>
<th>System State:</th>
<th>Run level 3 (multi-user)</th>
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<tbody>
<tr>
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<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
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| Software Availability: | |
|------------------------| |
| Dec-2011               | |

## Results Table

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<tr>
<th>Benchmark</th>
<th>Base Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak Copies</th>
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<th>Ratio</th>
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<td>465.tonto</td>
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<td>482.sphinx3</td>
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<td>8</td>
<td>976</td>
<td>160</td>
<td>978</td>
<td>159</td>
</tr>
</tbody>
</table>

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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CPU2006 license: 19
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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>
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.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

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Base Optimization Flags

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

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

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**SPECfp_rate_base2006 = 163**

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### Peak Portability Flags (Continued)

- 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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### 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: `--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: -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.

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