Fujitsu
PRIMERGY RX200 S6, Intel Xeon E5507, 2.27 GHz

SPECfp®2006 = 29.5  
SPECfp_base2006 = 27.5

CPU2006 license: 19
Test sponsor: Fujitsu
Test date: May-2010
Tested by: Fujitsu
Software Availability: Jan-2010

Hardware
CPU Name: Intel Xeon E5507
CPU Characteristics:
CPU MHz: 2267
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

Software
Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1
Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel: Yes
File System: ext3
System State: Multi-User Run Level 3

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**SPEC CFP2006 Result**

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<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>4 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x SATA, 160 GB, 5400 RPM</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>None</td>
</tr>
</tbody>
</table>

**SPECfp2006 =** 29.5

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**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>119</td>
<td>114</td>
<td>117</td>
<td>116</td>
</tr>
<tr>
<td>416.games</td>
<td><strong>1165</strong></td>
<td><strong>16.8</strong></td>
<td>1169</td>
<td>16.7</td>
</tr>
<tr>
<td>433.milc</td>
<td>266</td>
<td>34.5</td>
<td>266</td>
<td>34.5</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>378</td>
<td>24.1</td>
<td>378</td>
<td>24.1</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>448</td>
<td>15.9</td>
<td><strong>449</strong></td>
<td><strong>15.9</strong></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>90.0</td>
<td>133</td>
<td><strong>90.0</strong></td>
<td><strong>133</strong></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>406</td>
<td>23.2</td>
<td>408</td>
<td>23.0</td>
</tr>
<tr>
<td>444.namd</td>
<td>594</td>
<td>13.5</td>
<td><strong>594</strong></td>
<td><strong>13.5</strong></td>
</tr>
<tr>
<td>447.dealII</td>
<td>438</td>
<td><strong>26.1</strong></td>
<td>438</td>
<td>26.1</td>
</tr>
<tr>
<td>450.soplex</td>
<td><strong>422</strong></td>
<td><strong>19.8</strong></td>
<td>423</td>
<td>19.7</td>
</tr>
<tr>
<td>453.povray</td>
<td>268</td>
<td>19.9</td>
<td><strong>266</strong></td>
<td><strong>20.0</strong></td>
</tr>
<tr>
<td>454.calculix</td>
<td>423</td>
<td>19.5</td>
<td><strong>425</strong></td>
<td><strong>19.4</strong></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>334</td>
<td>31.8</td>
<td>366</td>
<td>29.0</td>
</tr>
<tr>
<td>465.tonto</td>
<td>546</td>
<td>18.0</td>
<td>553</td>
<td>17.8</td>
</tr>
<tr>
<td>470.lbm</td>
<td>387</td>
<td>35.5</td>
<td>386</td>
<td>35.6</td>
</tr>
<tr>
<td>481.wrf</td>
<td><strong>385</strong></td>
<td><strong>29.0</strong></td>
<td>384</td>
<td>29.1</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td><strong>839</strong></td>
<td><strong>23.2</strong></td>
<td>838</td>
<td>23.3</td>
</tr>
</tbody>
</table>

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

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**Operating System Notes**

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

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**Platform Notes**

The system automatically configures the memory to run at 800 MHz.

**BIOS configuration:**

Data Reuse Optimization = Disable

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**General Notes**

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
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General Notes (Continued)
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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -03 -no-prec-div -static -parallel -opt-prefetch

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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
             -ansi-alias

  470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
             -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
             -parallel -ansi-alias -auto-ilp32

  482.sphinx3: basepeak = yes

C++ benchmarks:
  444.namd: basepeak = yes

  447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
               -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
                -unroll2 -ansi-alias -scalar-rep -auto-ilp32

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Peak Optimization Flags (Continued)

450.soplex: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-opt-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -auto-ilp32

453.povray: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: --sse4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel

416.gamess: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Obo -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Obo -opt-prefetch -parallel

465.tonto: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: --sse4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: --sse4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.01.xml
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