Cryo Performance Computing Ltd
Cryo Quad EUP-RO

SPECfp®2006 = 76.2
SPECfp_base2006 = 73.2

CPU2006 license: 3979
Test date: May-2011
Test sponsor: Cryo Performance Computing Ltd
Hardware Availability: Feb-2011
Tested by: Cryo Performance Computing Ltd
Software Availability: Dec-2010

<table>
<thead>
<tr>
<th>Spec Benchmark</th>
<th>Confidence Factor</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<tr>
<td>416. GAMESS</td>
<td>45.5</td>
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<td>433.milc</td>
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<td>482.sphinx3</td>
<td>69.3</td>
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SPECfp_base2006 = 73.2
SPECfp2006 = 76.2

Hardware
CPU Name: Intel Core i7-2600K
CPU Characteristics: Intel Turbo Boost Technology disabled
CPU MHz: 4800
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
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

Software
Operating System: SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-default
Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 12
Auto Parallel: Yes
File System: ext3
System State: Run level 3 (multi-user)
### SPEC CFP2006 Result

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<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>8 MB I+D on chip per chip</th>
<th>Base Pointers:</th>
<th>64-bit</th>
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<tbody>
<tr>
<td>Other Cache:</td>
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<td>Peak Pointers:</td>
<td>32/64-bit</td>
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<tr>
<td>Memory:</td>
<td>16 GB (4 x 4 GB 2Rx4 PC3-16000U-9, running at 1866 MHz and CL9)</td>
<td>Other Software:</td>
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<td>Disk Subsystem:</td>
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<td>Other Hardware:</td>
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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<td>263</td>
<td>74.0</td>
</tr>
</tbody>
</table>

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

### General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
Hyper-Threading Technology Disabled

### Base Compiler Invocation

C benchmarks:
```
icc -m64
```

C++ benchmarks:
```
icppc -m64
```
SPEC CFP2006 Result

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Base Compiler Invocation (Continued)

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.mlscmp: -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

Benchmarks using both Fortran and C:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Peak Compiler Invocation

C benchmarks:
  icc -m64

Continued on next page
Peak Compiler Invocation (Continued)

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) -O3(pass 2)
             -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
             -ansi-alias

   470.lbm: basepeak = yes

   482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
                 -unroll12

C++ benchmarks:
   444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
             -fno-alias -auto-ilp32

   447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll12 -ansi-alias -scalar-rep -auto-ilp32

   450.soplex: basepeak = yes

   453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll14 -ansi-alias

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

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Peak Optimization Flags (Continued)

416.gamess: -xSSE4.2(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 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(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 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(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: -xSSE4.2(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: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Cryo-platform-linux64-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Cryo-platform-linux64-revA.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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