SPEC® CFP2006 Result

Hewlett-Packard Company

ProLiant ML350 G5 (3.0 GHz, Intel Xeon processor X5365)

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

SPECfp®2006 = NC
SPECfp_base2006 = NC

Test date: Oct-2007
Hardware Availability: Sep-2007
Software Availability: Nov-2007

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Hardware

| CPU Name: | Intel Xeon X5365 |
| CPU Characteristics: | 3.0 GHz, 2x4 MB L2 shared, 1333 MHz system bus |
| CPU MHz: | 3000 |
| 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: | 8 MB I+D on chip per chip, 4 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB PC2-5300F CL5) |
| Disk Subsystem: | 1x72 GB 15 K SAS |
| Other Hardware: | None |

Software

| Operating System: | SuSE Linux Enterprise Server 10 (x86_64) SP1 kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725 |
| Auto Parallel: | Yes |
| File System: | ext2 |
| System State: | Multi-user run level 3 |
| Base Pointers: | 64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | binutils-2.17.50 |
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Results Table

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Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M
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Platform Notes
BIOS configuration: Power Regulator set to Static High Performance Mode

Base Compiler Invocation
C benchmarks:
  icc
C++ benchmarks:
  icpc
Fortran benchmarks:
  ifort
Benchmarks using both Fortran and C:
  icc ifort

Base Portability Flags

409.bwaves: -DSPEC_CPU_LP64
416.gmres: -DSPEC_CPU_LP64
433.mcf: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64 -nofor_main
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64 -nofor_main
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64 -nofor_main
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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**Base Portability Flags (Continued)**

- 481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`
- 482.sphinx3: `-DSPEC_CPU_LP64`

**Base Optimization Flags**

- C benchmarks: `-fast -parallel`
- C++ benchmarks: `-fast -parallel`
- Fortran benchmarks: `-fast -parallel`
- Benchmarks using both Fortran and C: `-fast -parallel`

**Peak Compiler Invocation**

- C benchmarks (except as noted below):
  ```
  /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icc
  /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib
  -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include
  433.milc: icc
  ```
- C++ benchmarks (except as noted below):
  ```
  icpc
  450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icpc
  -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib
  -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include
  ```
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**Peak Compiler Invocation (Continued)**

Fortran benchmarks:
- `ifort`

Benchmarks using both Fortran and C:
- `icc ifort`

**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`
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- `447.dealII: -DSPEC_CPU_LP64`
- `453.povray: -DSPEC_CPU_LP64`
- `454.calculix: -DSPEC_CPU_LP64 -nofor_main`
- `459.CosFDTD: -DSPEC_CPU_LP64`
- `463.tonto: -DSPEC_CPU_LP64`
- `481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

**Peak Optimization Flags**

C benchmarks:
- `433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32`
- `470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -scalar-rep -prefetch -opt-malloc-options=3 `

Continued on next page
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<table>
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<tr>
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### Peak Optimization Flags (Continued)

```plaintext
482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
           -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
             -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
            -opt-malloc-options 3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
             -ansi-alias -scalar-rep-

Fortran benchmarks:

410.bwaves: -fast -prefetch -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
             -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast
            -basepeak = yes

439.SemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
              -prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
             -auto-ilp32
```

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Non-Compliant
## SPEC CFP2006 Result

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<tr>
<th>SPECf2006</th>
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### Peak Optimization Flags (Continued)

- **436.cactusADM:** `-prof-gen(pass 1)` `-prof-use(pass 2)` `-fast` `-unroll2` `-prefetch` `-parallel` `-auto-ilp32`
- **454.calculix:** `-fast` `-unroll-aggressive` `-auto-ilp32`
- **481.wrf:** `-fast` `-parallel` `-prefetch` `-auto-ilp32`

The flags file that was used to format this result can be browsed at  
http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.20090714.01.html

You can also download the XML flags source by saving the following link:  
http://www.spec.org/cpu2006/flags/HP-Intel-ic10.1-linux-fp-flags.20090714.01.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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