**SPEC® CFP2006 Result**

**Hewlett-Packard Company**

ProLiant BL460c
(3.33 GHz, Intel Xeon processor X5260)

**SPECfp®_rate2006 = 56.8**

**SPECfp_rate_base2006 = 50.5**

<table>
<thead>
<tr>
<th>Test sponsor: Hewlett-Packard Company</th>
<th>Tested by: Hewlett-Packard Company</th>
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<tr>
<td><strong>CPU2006 license</strong>: 3</td>
<td><strong>Test date</strong>: Dec-2007</td>
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<td><strong>Hardware Availability</strong>: Jan-2008</td>
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<tr>
<td><strong>Software Availability</strong>: Nov-2007</td>
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</tr>
</tbody>
</table>

### Hardware

- **CPU Name**: Intel Xeon X5260
- **CPU Characteristics**: 3.33 GHz, 6 MB L2 shared, 1333 MHz system bus
- **CPU MHz**: 3333
- **FPU**: Integrated
- **CPU(s) enabled**: 4 cores, 2 chips, 2 cores/chip
- **CPU(s) orderable**: 1,2 chips
- **Primary Cache**: 32 KB I + 32 KB D on chip per core
- **Secondary Cache**: 6 MB I+D on chip per chip

### Software

- **Operating System**: SUSE Linux Enterprise Server 10 (x86_64) SP1 Kernel 2.6.16.46-0.12-smp
- **Compiler**: Intel C++ Compiler for applications running on IA-32 and Intel 64, Version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008
- **Intel Fortran Compiler for applications running on IA-32 and Intel 64, Version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008**
- **Auto Parallel**: Yes
- **File System**: ext2

**Continued on next page**
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System State: Multi-user run level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.50

L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F CL5)
Disk Subsystem: 1x72 GB 15 K SAS
Other Hardware: None

Operating System Notes
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M

Platform Notes
BIOS configuration:
Power Regulator set to Static High Performance Mode
Adjacent Sector Prefetch Disabled

Results Table

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<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
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Software Availability: Nov-2007

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
343.milc: -DSPEC_CPU_LP64
344.zpeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -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:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast
# SPEC CFP2006 Result

## Hewlett-Packard Company

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## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

```
icpc
```

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

Fortran benchmarks (except as noted below):

```
ifort
```

437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/include

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
- 444.namd: -DSPEC_CPU_LP64
- 447.dealII: -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
- 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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### Peak Optimization Flags (Continued)

482.sphinx3: \(-\text{fast} \ -\text{unroll2}\)

C++ benchmarks:

- 444.namd: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{fno-alias} \ -\text{auto-ilp32}\)
- 447.dealII: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{unroll2} \ -\text{ansi-alias} \ -\text{scalar-rep-}\)
- 450.soplex: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{opt-malloc-options=3}\)
- 453.povray: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{unroll4} \ -\text{ansi-alias}\)

Fortran benchmarks:

- 410.bwaves: \(-\text{fast} \ -\text{prefetch}\)
- 416.gamess: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{unroll2} \ -\text{Ob0} \ -\text{ansi-alias} \ -\text{scalar-rep-}\)
- 434.zeusmp: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast}\)
- 437.leslie3d: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{prefetch} \ -\text{opt-malloc-options=3}\)
- 459.GemsFDTD: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{unroll2} \ -\text{Ob0} \ -\text{prefetch}\)
- 465.tonto: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{unroll4} \ -\text{auto}\)

**Benchmarks using both Fortran and C:**

- 435.gromacs: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{prefetch} \ -\text{auto-ilp32}\)
- 436.cactusADM: \(-\text{prof-gen(pass 1)} \ -\text{prof-use(pass 2)} \ -\text{fast} \ -\text{unroll2} \ -\text{prefetch} \ -\text{parallel} \ -\text{auto-ilp32}\)
- 454.calculix: \(-\text{fast} \ -\text{unroll-aggressive} \ -\text{auto-ilp32}\)
- 481.wrf: \(-\text{fast} \ -\text{auto-ilp32}\)

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.html**
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You can also download the XML flags source by saving the following link:

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.