**SPEC® CFP2006 Result**

**Hewlett-Packard Company**

**ProLiant ML350 G5**  
(3.16 GHz, Intel Xeon processor X5460)

**SPECfp®2006 = NC**  
**SPECfp_base2006 = NC**

**CPU2006 license:** 3  
**Test date:** Jan-2008

**Test sponsor:** Hewlett-Packard Company  
**Hardware Availability:** Jan-2008

**Tested by:** Hewlett-Packard Company  
**Software Availability:** Nov-2007

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**SPEC has determined that this result was not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter reported that the result would not meet the 3 month availability requirement in the SPEC CPU2006 run rules due to a change in the availability date of the system.**

### Hardware

- **CPU Name:** Intel Xeon X5460  
- **CPU Characteristics:** 3.16 GHz, 2x6 MB L2 shared, 1333 MHz system bus
- **CPU MHz:** 3166
- **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:** 12 MB I+D on chip per core, 6 MB shared / 2 cores
- **L3 Cache:** None
- **Other Cache:** None
- **Memory:** 32 GB (8x4 GB PC2-5300F CL5)
- **Disk Subsystem:** 1x72 GB 15K 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++ 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
- **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

<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>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>416.gamess</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>433.milc</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
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<tr>
<td>434.zeusmp</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
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<tr>
<td>444.namd</td>
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<tr>
<td>447.dealII</td>
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<tr>
<td>450.soplex</td>
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<tr>
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<tr>
<td>459.GemsFDTD</td>
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<tr>
<td>465.tonto</td>
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<tr>
<td>470.1bm</td>
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<tr>
<td>481.wrf</td>
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<tr>
<td>482.qm</td>
<td>NC</td>
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</tr>
</tbody>
</table>

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

Operating System Notes

'unlimit -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
SPEC CFP2006 Result

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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

- 416.gamess: -DSPEC_CPU_LP64
- 433.milc: -DSPEC_CPU_LP64
- 434.zeusmp: -DSPEC_CPU_LP64
- 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64 -nofor_main
- 447.tacoII: -DSPEC_CPU_LP64
- 450.soplex: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64
- 454.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 459.GemsFDTD: -DSPEC_CPU_LP64
- 465.tonto: -DSPEC_CPU_LP64
- 470.lbm: -DSPEC_CPU_LP64

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Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```bash
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
- 436.cactusADM: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64
- 447.dealII: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64
- 454.calculix: -DSPEC_CPU_LP64
- 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-lip32
- 470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -scalar-rep -prefetch -opt-malloc-options=3
- 482.sphinx3: -fast -unroll2
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Peak Optimization Flags (Continued)

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

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
- 437.leslie3d: basepeak = yes -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
- 436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32

Non-Compliant
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Peak Optimization Flags (Continued)

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.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.xml

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