## SPEC® CFP2006 Result

### Hewlett-Packard Company

HP Integrity rx8640
(1.6GHz/24MB Dual-Core Intel Itanium 2)

**SPECfp®_rate2006 = 171**

**SPECfp_rate_base2006 = 166**

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Hewlett-Packard Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Test Date</td>
<td>Dec-2006</td>
</tr>
<tr>
<td>Hardware Avail</td>
<td>Sep-2006</td>
</tr>
<tr>
<td>Software Avail</td>
<td>Nov-2006</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Dual-Core Intel Itanium 2 9050</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>1.6GHz/24MB, 533MHz FSB</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>1600</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>16 cores, 8 chips, 2 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1-16 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>16 KB I + 16 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I + 256 KB D on chip per core</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux AS release 4 (Update 4)</td>
</tr>
<tr>
<td>Compiler</td>
<td>Intel C++ Compiler 9.1 for Linux (Build 20061105)</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ext3</td>
</tr>
<tr>
<td>System State</td>
<td>Multi-user</td>
</tr>
</tbody>
</table>

**SPECfp_rate_base2006 = 166**

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### Operating System Notes

stacksize set to unlimited prior to run

### Platform Notes

System was configured as a single partition with 2 cells and 4 processors (8 cores) per cell. Memory was configured as 100% cell local.

The following config file entry was used to bind processes to cores using the Linux "numactl" utility:

```
submit = let "MYNUM=$SPECCOPYNUM" ; let "NODE=$MYNUM/8" ; numactl --cpubind \$NODE --membind \$NODE $command
```
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CPU2006 license: 03
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Dec-2006
Hardware Availability: Sep-2006
Software Availability: Nov-2006

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.gamest: -DSPEC_CPU_LP64
433.mlcl: -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_LINUX -DSPEC_CPU_CASE_FLAG
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast -IPF_fp_relaxed -ansi-alias

C++ benchmarks:
-fast -IPF_fp_relaxed -ansi-alias

Fortran benchmarks:
-fast -IPF_fp_relaxed

Benchmarks using both Fortran and C:
-fast -IPF_fp_relaxed -ansi-alias
Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -fast -IPF_fp_relaxed -ansi-alias -fno-alias
470.lbm: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed
        -ansi-alias
482.sphinx3: Same as 470.lbm

C++ benchmarks:
444.namd: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed
        -no-prefetch -fno-alias
447.dealII: -fast -IPF_fp_relaxed -ansi-alias -no-alias-args
450.soplex: -fast -IPF_fp_relaxed -ansi-alias -inline-factor=150
453.povray: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed
            -ansi-alias

Fortran benchmarks:
410.bwaves: basepeak = yes
416.gamess: -fast -IPF_fp_relaxed -inline-factor=150

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**Test date:** Dec-2006  
**Hardware Availability:** Sep-2006  
**Software Availability:** Nov-2006

#### Peak Optimization Flags (Continued)

- `434.zeusmp`: `basepeak = yes`
- `437.leslie3d`: `basepeak = yes`
- `459.GemsFDTD`: `basepeak = yes`
- `465.tonto`: `basepeak = yes`

**Benchmarks using both Fortran and C:**

- `435.gromacs`: `-prof_gen(pass 1) -prof_use(pass 2) -fast -IPF_fp_relaxed -fno-alias -inline-factor=150`
- `436.cactusADM`: `basepeak = yes`
- `454.calculix`: `-fast -IPF_fp_relaxed -fno-alias`
- `481.wrf`: `basepeak = yes`

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/IPF_intel91_flags.20090715.xml](http://www.spec.org/cpu2006/flags/IPF_intel91_flags.20090715.xml)

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

Tested with SPEC CPU2006 v1.0.  