# SPEC® CFP2006 Result

## Hewlett-Packard Company

### HP Integrity rx6600 (1.6GHz/24MB Dual-Core Intel Itanium 2)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>18.1</th>
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<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>17.3</td>
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- **CPU2006 license:** 03
- **Test sponsor:** Hewlett-Packard Company
- **Tested by:** Hewlett-Packard Company
- **Test date:** Aug-2006
- **Hardware Availability:** Sep-2006
- **Software Availability:** Sep-2006

<table>
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<tr>
<th>Benchmark</th>
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</table>

**SPECfp_base2006 = 17.3**

**SPECfp2006 = 18.1**

### Hardware

- **CPU Name:** Dual-Core Intel Itanium 2 9050
- **CPU Characteristics:** 1.6GHz/24MB, 533MHz FSB
- **CPU MHz:** 1600
- **FPU:** Integrated
- **CPU(s) enabled:** 2 cores, 1 chip, 2 cores/chip
- **CPU(s) orderable:** 1-4 chips
- **Primary Cache:** 16 KB I + 16 KB D on chip per core
- **Secondary Cache:** 1 MB I + 256 KB D on chip per core

### Software

- **Operating System:** HP-UX11i-TCOE B.11.23.0609
- **Compiler:** HP C/aC++ Developer's Bundle C.11.23.12
- **Auto Parallel:** No
- **File System:** vxfs
- **System State:** Multi-user
- **Base Pointers:** 32-bit
- **Peak Pointers:** 32-bit
- **Other Software:** None

**Continued on next page**
## Results Table

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</table>

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

## Operating System Notes

The system had the September 2006 HP-UX 11i v2 Technical Computing Environment (TCOE) and compilers installed, along with the following patches:

- PHSS_34858 linker + fdp cumulative patch
- PHSS_34853 Math Library Cumulative Patch
- PHSS_34854 Integrity Unwind Library
- PHSS_34855 HP C Compiler (A.06.12)
- PHSS_34856 aC++ Compiler (A.06.12)
- PHSS_34857 u2comp/be/plugin library patch
- PHSS_34395 FORTRAN I/O Library [libIO77]
- PHSS_34397 FORTRAN Intrinsics [libF90 B.11.23.17]
- PHSS_34399 Fortran Product Patch, v3.1 to v3.1.1
- PHKL_34020 Perfmon enhancements and Itanium Dual-Core

continued on next page
Hewlett-Packard Company
HP Integrity rx6600 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECfp2006 = 18.1
SPECfp_base2006 = 17.3

CPU2006 license: 03
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Operating System Notes (Continued)

The following kernel tunables were set, in addition to the defaults set by the Technical Computing OE:

dbc_max_pct=20
dbc_min_pct=20
maxdsiz=3221225472
maxssiz=401604608

Platform Notes

The "cpuconfig" EFI command was used prior to booting to deconfigure processors.

Although two cores were enabled during testing, the SPEC CPU2006 benchmarks used only one core.

Base Compiler Invocation

C benchmarks:
/opt/ansic/bin/cc -Ae

C++ benchmarks:
/opt/aCC/bin/aCC -Aa

Fortran benchmarks:
/opt/fortran90/bin/f90

Benchmarks using both Fortran and C:
/opt/ansic/bin/cc -Ae /opt/fortran90/bin/f90

Base Portability Flags

453.povray: -DSPEC_CPU_NEED_INVHYP
454.calculix: -DSPEC_CPU_NOZMODIFIER
481.wrf: -DNOUNDERSCORE +noppu

Base Optimization Flags

C benchmarks:
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
-Wl,+pi,64M -Wl,-N

C++ benchmarks:
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
-Wl,+pi,64M -Wl,-N
**Hewlett-Packard Company**

HP Integrity rx6600 (1.6GHz/24MB Dual-Core Intel Itanium 2)

**SPECfp2006 =** 18.1  
**SPECfp_base2006 =** 17.3

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</table>

**Test sponsor:** Hewlett-Packard Company  
**Tested by:** Hewlett-Packard Company  
**Hardware Availability:** Sep-2006  
**Software Availability:** Sep-2006

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### Base Optimization Flags (Continued)

Fortran benchmarks:
+Ofast -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N

Benchmarks using both Fortran and C:
+Ofast(-hp_cc) +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Ofast(-hp_f90) -Wl,-N

---

### Peak Compiler Invocation

**C benchmarks:**
```
/opt/ansic/bin/cc -Ae
```

**C++ benchmarks:**
```
/opt/aCC/bin/aCC -Aa
```

Fortran benchmarks:
```
/opt/fortran90/bin/f90
```

Benchmarks using both Fortran and C:
```
/opt/ansic/bin/cc -Ae /opt/fortran90/bin/f90
```

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### Peak Portability Flags

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<th>Benchmark</th>
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<td>453.povray</td>
<td>-DSPEC_CPU_NEED_INVHYP</td>
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<tr>
<td>454.calculix</td>
<td>-DSPEC_CPU_NOZMODIFIER</td>
</tr>
<tr>
<td>481.wrf</td>
<td>-DNOUNDERSCORE +noppu</td>
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</tbody>
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### Peak Optimization Flags

**C benchmarks:**
```
433.milc: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofast -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap -Wl,-N
```

```
470.lbm: basepeak = yes
```

```
482.sphinx3: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofast -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
```

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Continued on next page
Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: basepeak = yes
447.dealII: basepeak = yes
450.soplex: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap -Wl,-N
453.povray: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct -Wl,-N
434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct -Wl,-N
465.tonto: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct

Benchmarks using both Fortran and C:

435.gromacs: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster(-hp_cc) +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap +Ofaster(-hp_f90)
436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.html
### SPEC CFP2006 Result

**Hewlett-Packard Company**

**HP Integrity rx6600 (1.6GHz/24MB Dual-Core Intel Itanium 2)**

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**SPECfp2006 =** 18.1

**SPECfp_base2006 =** 17.3

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.xml

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

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