Hewlett-Packard Company

HP Integrity rx2620
(1.4GHz/12MB Dual-Core Intel Itanium 2)

**SPECint®2006 =** 12.6
**SPECint_base2006 =** 11.7

<table>
<thead>
<tr>
<th>CPU2006 license</th>
<th>03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Tested by</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Test date</td>
<td>Oct-2006</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Sep-2006</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Sep-2006</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECint®2006 = 12.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006 = 11.7</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Dual-Core Intel Itanium 2 9015
- **CPU Characteristics:** 1.4GHz/12MB, 400MHz FSB
- **CPU MHz:** 1400
- **FPU:** Integrated
- **CPU(s) enabled:** 2 cores, 1 chip, 2 cores/chip
- **CPU(s) orderable:** 1-2 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
- **L3 Cache:** 6 MB I+D on chip per core
- **Other Cache:** None
- **Memory:** 24 GB (12x2GB DIMMs)
- **Disk Subsystem:** 146GB 10K RPM SCSI
- **Other Hardware:** None

### Software

- **Operating System:** HPUX11i-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:** MicroQuill Smartheap 8.0

---

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>1195</td>
<td>8.18</td>
<td>1194</td>
<td>8.18</td>
<td>1190</td>
<td>8.21</td>
<td>999</td>
<td>9.78</td>
<td>1001</td>
<td>9.76</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>1139</td>
<td>8.47</td>
<td>1137</td>
<td>8.49</td>
<td>1137</td>
<td>8.49</td>
<td>1114</td>
<td>8.66</td>
<td>1114</td>
<td>8.66</td>
</tr>
<tr>
<td>403.gcc</td>
<td>902</td>
<td>8.92</td>
<td>903</td>
<td>8.91</td>
<td>905</td>
<td>8.89</td>
<td>834</td>
<td>9.65</td>
<td>835</td>
<td>9.64</td>
</tr>
<tr>
<td>429.mcf</td>
<td>742</td>
<td>12.3</td>
<td>741</td>
<td>12.3</td>
<td>740</td>
<td>12.3</td>
<td>709</td>
<td>12.9</td>
<td>706</td>
<td>12.9</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>1068</td>
<td>9.82</td>
<td>1068</td>
<td>9.82</td>
<td>1069</td>
<td>9.81</td>
<td>842</td>
<td>12.5</td>
<td>841</td>
<td>12.5</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>405</td>
<td>23.1</td>
<td>404</td>
<td>23.1</td>
<td>405</td>
<td>23.1</td>
<td>391</td>
<td>23.9</td>
<td>390</td>
<td>23.9</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>1428</td>
<td>8.47</td>
<td>1429</td>
<td>8.47</td>
<td>1428</td>
<td>8.47</td>
<td>1235</td>
<td>9.79</td>
<td>1235</td>
<td>9.80</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>632</td>
<td>32.8</td>
<td>631</td>
<td>32.8</td>
<td>629</td>
<td>32.9</td>
<td>643</td>
<td>32.2</td>
<td>625</td>
<td>33.1</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>1190</td>
<td>18.6</td>
<td>1190</td>
<td>18.6</td>
<td>1191</td>
<td>18.6</td>
<td>1190</td>
<td>18.6</td>
<td>1191</td>
<td>18.6</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>1071</td>
<td>5.84</td>
<td>1073</td>
<td>5.83</td>
<td>1064</td>
<td>5.88</td>
<td>1002</td>
<td>6.24</td>
<td>1000</td>
<td>6.25</td>
</tr>
<tr>
<td>473.astar</td>
<td>620</td>
<td>11.3</td>
<td>620</td>
<td>11.3</td>
<td>621</td>
<td>11.3</td>
<td>603</td>
<td>11.7</td>
<td>602</td>
<td>11.7</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>640</td>
<td>10.8</td>
<td>639</td>
<td>10.8</td>
<td>640</td>
<td>10.8</td>
<td>563</td>
<td>12.5</td>
<td>562</td>
<td>12.5</td>
</tr>
</tbody>
</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 Operating 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

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
Hewlett-Packard Company
HP Integrity rx2620
(1.4GHz/12MB Dual-Core Intel Itanium 2)

SPECint2006 = 12.6
SPECint_base2006 = 11.7

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

Base Portability Flags

400.perlbench: -DSPEC_CPU_HPUX_IA64
403.gcc: -DSPEC_CPU_HPUX
462.libquantum: -DSPEC_CPU_HPUX
483.xalancbmk: -DSPEC_CPU_HPUX_IA64

Base Optimization Flags

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

C++ benchmarks:
+Oflags +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
-Wl,+pi,64M -Wl,-N
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

Peak Compiler Invocation

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

C++ benchmarks:
/opt/aCC/bin/aCC -Aa
Hewlett-Packard Company

HP Integrity rx2620
(1.4GHz/12MB Dual-Core Intel Itanium 2)

SPECint2006 = 12.6
SPECint_base2006 = 11.7

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

Test date: Oct-2006
Hardware Availability: Sep-2006
Software Availability: Sep-2006

Peak Portability Flags

400.perlbrench: -DSPEC_CPU_HPUX_IA64
403.gcc: -DSPEC_CPU_HPUX
462.libquantum: -DSPEC_CPU_HPUX
483.xalancbmk: -DSPEC_CPU_HPUX_IA64

Peak Optimization Flags

C benchmarks:

400.perlbrench: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M -Wl,-N

401.bzip2: Same as 400.perlbrench
403.gcc: Same as 400.perlbrench
429.mcf: Same as 400.perlbrench

445.gobmk: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct

456.hmmer: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M

458.sjeng: Same as 445.gobmk
462.libquantum: Same as 456.hmmer
464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

473.astar: +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

483.xalancbmk: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a
Hewlett-Packard Company
HP Integrity rx2620
(1.4GHz/12MB Dual-Core Intel Itanium 2)

SPECint2006 = 12.6
SPECint_base2006 = 11.7

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

Test date: Oct-2006
Hardware Availability: Sep-2006
Software Availability: Sep-2006

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.11.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.11.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.0.
Originally published on 15 November 2006.