**Hewlett-Packard Company**

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

### SPECint_rate2006 = 1650

### SPECint_rate_base2006 = 1530

<table>
<thead>
<tr>
<th>SPECint_rate_base2006 = 1530</th>
<th>SPECint2006 = 1650</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Software</td>
</tr>
<tr>
<td>CPU Name:</td>
<td>Operating System:</td>
</tr>
<tr>
<td>Dual-Core Intel Itanium 2</td>
<td>HPUX11i-TCOE B.11.23.0609</td>
</tr>
<tr>
<td>9050</td>
<td>Compiler:</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>HP C/aC++ Developer's Bundle C.11.23.12</td>
</tr>
<tr>
<td>1.6GHz/24MB, 533MHz FSB</td>
<td>Auto Parallel:</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>No</td>
</tr>
<tr>
<td>1600</td>
<td>File System:</td>
</tr>
<tr>
<td>FPU:</td>
<td>vxfs</td>
</tr>
<tr>
<td>Integrated</td>
<td>System State:</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>Multi-user</td>
</tr>
<tr>
<td>128 cores, 64 chips, 2</td>
<td>Base Pointers:</td>
</tr>
<tr>
<td>cores/chip</td>
<td>32-bit</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>Peak Pointers:</td>
</tr>
<tr>
<td>1-64 chips</td>
<td>32-bit</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>Other Software:</td>
</tr>
<tr>
<td>16 KB I + 16 KB D on chip</td>
<td>MicroQuill Smartheap 8.0</td>
</tr>
<tr>
<td>per core</td>
<td></td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td></td>
</tr>
<tr>
<td>1 MB I + 256 KB D on chip</td>
<td></td>
</tr>
<tr>
<td>per core</td>
<td></td>
</tr>
<tr>
<td>L3 Cache:</td>
<td></td>
</tr>
<tr>
<td>12 MB I+D on chip per core</td>
<td></td>
</tr>
<tr>
<td>Other Cache:</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Memory:</td>
<td></td>
</tr>
<tr>
<td>512 GB (512x1GB DIMMs)</td>
<td></td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td></td>
</tr>
<tr>
<td>3x73GB 15K RPM SCSI (striped)</td>
<td></td>
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<tr>
<td>Other Hardware:</td>
<td></td>
</tr>
<tr>
<td>None</td>
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</tbody>
</table>

**Test date:** Aug-2006

**Hardware Availability:** Sep-2006

**Test sponsor:** Hewlett-Packard Company

**Tested by:** Hewlett-Packard Company
Hewlett-Packard Company

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SPECint_rate_base2006 = 1530

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>Base</td>
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<tr>
<td>400.perlbench</td>
<td>128</td>
<td>1041</td>
<td>1040</td>
<td>1039</td>
<td>1200</td>
<td>128</td>
<td>869</td>
<td>1440</td>
<td>1430</td>
<td>876</td>
<td>1430</td>
<td>877</td>
<td>1430</td>
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<tr>
<td>401.bzip2</td>
<td>128</td>
<td>1015</td>
<td>1220</td>
<td>1201</td>
<td>1210</td>
<td>128</td>
<td>998</td>
<td>1240</td>
<td>1240</td>
<td>996</td>
<td>1240</td>
<td>998</td>
<td>1240</td>
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<tr>
<td>403.gcc</td>
<td>128</td>
<td>919</td>
<td>1120</td>
<td>941</td>
<td>1100</td>
<td>128</td>
<td>895</td>
<td>1150</td>
<td>1150</td>
<td>897</td>
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<td>1140</td>
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<td>445.gobmk</td>
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<td>1440</td>
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<td>128</td>
<td>361</td>
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<td>361</td>
<td>3310</td>
<td>361</td>
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<td>458.sjeng</td>
<td>128</td>
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<td>1301</td>
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<td>1301</td>
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<tr>
<td>462.libquantum</td>
<td>128</td>
<td>1537</td>
<td>1730</td>
<td>1540</td>
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<td>1537</td>
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<td>471.omnetpp</td>
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<td>760</td>
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<tr>
<td>473.astar</td>
<td>128</td>
<td>510</td>
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<td>508</td>
<td>1770</td>
<td>507</td>
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<td>1770</td>
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<tr>
<td>483.xalancbmk</td>
<td>128</td>
<td>565</td>
<td>1560</td>
<td>562</td>
<td>1570</td>
<td>562</td>
<td>1570</td>
<td>562</td>
<td>1570</td>
<td>562</td>
<td>1570</td>
<td>562</td>
<td>1570</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 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
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

Platform Notes

The system was configured as a single partition with 16 cells and 4 processors (8 cores) per cell. Memory was configured as 50% local and 50% interleaved.

The following config file entry was used to bind...
SPEC CINT2006 Result

Hewlett-Packard Company

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CPU2006 license: 03
Test sponsor: Hewlett-Packard Company
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Platform Notes (Continued)

to cells using the HP-UX "mpsched" utility:
submit = let "MYNUM=$SPECCOPYNUM" ; let "LDOM="MYNUM/8" ; mpsched -l $LDOM $command

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:
+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
/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

Peak Portability Flags

400.perlbench: -DSPEC_CPU_HPUX_IA64
403.gcc: -DSPEC_CPU_HPUX

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Test date: Aug-2006
Tested by: Hewlett-Packard Company
Hardware Availability: Sep-2006
Software Availability: Sep-2006

Peak Portability Flags (Continued)
462.libquantum: -DSPEC_CPU_HPUX
483.xalancbmk: -DSPEC_CPU_HPUX_IA64

Peak Optimization Flags

C benchmarks:
400.perlbench: +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.perlbench
403.gcc: Same as 400.perlbench
429.mcf: Same as 400.perlbench
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 +Odataprefetch=direct
458.sjeng: Same as 445.gobmk
462.libquantum: Same as 445.gobmk
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
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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.20090715.06.html

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

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