Hewlett-Packard Company

HP Integrity BL860c
(1.6GHz/18MB Dual-Core Intel Itanium 2)

SPECint®_rate2006 = 53.9
SPECint_rate_base2006 = 49.7

Hewlett-Packard Company

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

Test date: Jan-2007
Hardware Availability: Feb-2007
Software Availability: Feb-2007

Hardware

CPU Name: Dual-Core Intel Itanium 2 9040
CPU Characteristics: 1.6GHz/18MB, 533MHz FSB
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 4 cores, 2 chips, 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: 9 MB I+D on chip per core
Other Cache: None
Memory: 12 GB (12x1GB DIMMs)
Disk Subsystem: 73GB 10K RPM SAS
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
### Results Table

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<th>Ratio</th>
<th>Seconds</th>
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<td>473</td>
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<td>58.4</td>
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</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
- 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
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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
   -DSPEC_CPU_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
   -DSPEC_CPU_IA64
403.gcc: -DSPEC_CPU_HPUX
462.libquantum: -DSPEC_CPU_HPUX
483.xalancbmk: -DSPEC_CPU_HPUX_IA64
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### 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,+a, -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,+a,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,+a,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,+a,64M
  
  /usr/lib/32/libCsup.a
  /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

- **473.astar:**
  +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
  -Wl,+pd,64M -Wl,+a,64M +Onoparmsoverlap
  
  /usr/lib/32/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,+a,64M +Onoparmsoverlap
  
  /usr/lib/32/libCsup.a
  /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

---

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/CPU2006_flags.20090715.07.xml
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For other inquiries, please contact webmaster@spec.org.

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