Hewlett-Packard Company

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

SPECint_rate2006 = 416
SPECint_rate_base2006 = 385

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

Operating System: HP-UX11i-TCOE B.11.23.0609
Compiler: HP C/C++ 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

Hardware
CPU Name: Dual-Core Intel Itanium 2 9050
CPU Characteristics: 1.6GHz/24MB, 533MHz FSB
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 32 cores, 16 chips, 2 cores/chip
CPU(s) orderable: 1-16 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: 12 MB I+D on chip per core
Other Cache: None
Memory: 128 GB (64x2GB DIMMs)
Disk Subsystem: 73GB 15K RPM SCSI
Other Hardware: None
### 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

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### Results Table

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<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>464</td>
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</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
Hewlett-Packard Company
HP Integrity rx8640 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPEC CINT2006 Result

SPECint_rate2006 = 416
SPECint_rate_base2006 = 385

CPU2006 license: 03
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Platform Notes
The system was configured as a single partition with 4 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 processes 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:
+Ofast +Otype_safety=ansi -Wl,-a,archive_shared -Wl, +pd,64M -Wl, +p1,64M -Wl,-N
C++ benchmarks:
+Ofast +Otype_safety=ansi -Wl,-a,archive_shared -Wl, +pd,64M -Wl, +p1,64M -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
SPEC CINT2006 Result

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

Peak Portability Flags

400.perlbench: -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.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

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: +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

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](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](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.

Tested with SPEC CPU2006 v1.0.
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