# SPEC® CINT2006 Result



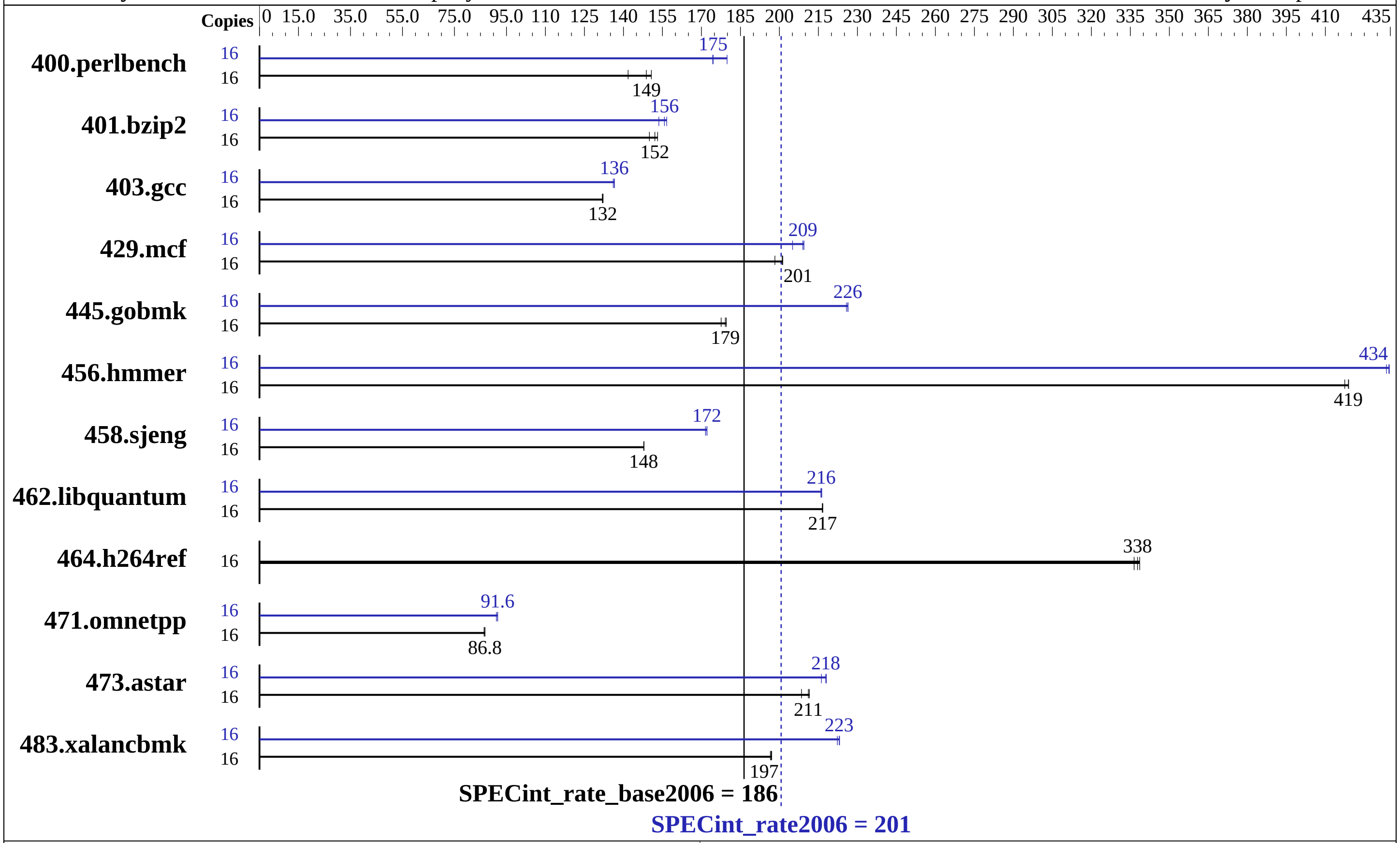
## Hewlett-Packard Company

HP Integrity rx7640 (1.6GHz/18MB Dual-Core Intel Itanium 2)

SPECint®_rate2006 = 201

SPECint_rate_base2006 = 186

| | | | |
|---|---|---|---|
| **CPU2006 license:** | 03 | **Test date:** | Sep-2006 |
| **Test sponsor:** | Hewlett-Packard Company | **Hardware Availability:** | Sep-2006 |
| **Tested by:** | Hewlett-Packard Company | **Software Availability:** | Sep-2006 |




| **Hardware** | |
|---|---|
| CPU Name: | Dual-Core Intel Itanium 2 9040 |
| CPU Characteristics: | 1.6GHz/18MB, 533MHz FSB |
| CPU MHz: | 1600 |
| FPU: | Integrated |
| CPU(s) enabled: | 16 cores, 8 chips, 2 cores/chip |
| CPU(s) orderable: | 1-8 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: | 64 GB (32x2GB DIMMs) |
| Disk Subsystem: | 73GB 15K 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 |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 16 | 1102 | 142 | **1050** | **149** | 1037 | 151 | 16 | 897 | 174 | **896** | **175** | 869 | 180 |
| 401.bzip2 | 16 | 1029 | 150 | **1015** | **152** | 1008 | 153 | 16 | 1005 | 154 | **991** | **156** | 986 | 157 |
| 403.gcc | 16 | 974 | 132 | 977 | 132 | **975** | **132** | 16 | 947 | 136 | 943 | 137 | **944** | **136** |
| 429.mcf | 16 | 736 | 198 | **726** | **201** | 725 | 201 | 16 | 712 | 205 | **698** | **209** | 697 | 209 |
| 445.gobmk | 16 | 945 | 178 | 935 | 180 | **937** | **179** | 16 | 743 | 226 | **742** | **226** | 741 | 226 |
| 456.hmmer | 16 | **356** | **419** | 358 | 417 | 356 | 419 | 16 | 344 | 434 | **344** | **434** | 343 | 435 |
| 458.sjeng | 16 | 1310 | 148 | **1310** | **148** | 1309 | 148 | 16 | 1128 | 172 | **1125** | **172** | 1125 | 172 |
| 462.libquantum | 16 | **1531** | **217** | 1530 | 217 | 1531 | 216 | 16 | 1535 | 216 | **1534** | **216** | 1533 | 216 |
| 464.h264ref | 16 | 1052 | 336 | 1046 | 339 | **1048** | **338** | 16 | 1052 | 336 | 1046 | 339 | **1048** | **338** |
| 471.omnetpp | 16 | 1157 | 86.4 | **1153** | **86.8** | 1153 | 86.8 | 16 | 1097 | 91.1 | **1092** | **91.6** | 1091 | 91.6 |
| 473.astar | 16 | 539 | 208 | 531 | 212 | **532** | **211** | 16 | 520 | 216 | **516** | **218** | 515 | 218 |
| 483.xalancbmk | 16 | 562 | 197 | **561** | **197** | 560 | 197 | 16 | 497 | 222 | 495 | 223 | **495** | **223** |

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
```

## Platform Notes

```
The system was configured as a single partition with 2 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:
+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

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# 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: `+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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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



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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