# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

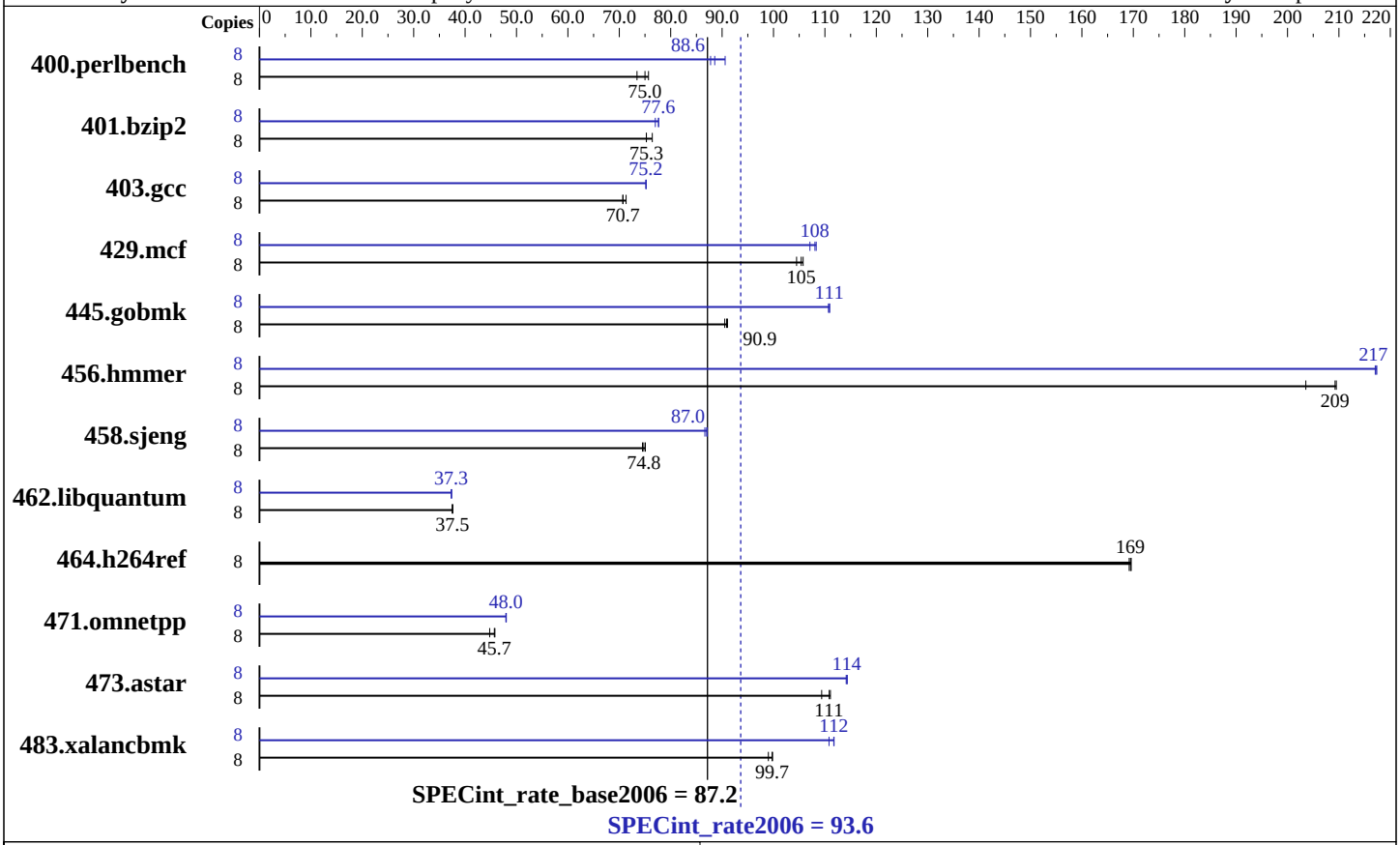
HP Integrity rx4640 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECint®_rate2006 = 93.6

SPECint_rate_base2006 = 87.2

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

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




### Hardware

| | |
|---|---|
| CPU Name: | Dual-Core Intel Itanium 2 9050 |
| CPU Characteristics: | 1.6GHz/24MB, 400MHz FSB |
| CPU MHz: | 1600 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 4 chips, 2 cores/chip |
| CPU(s) orderable: | 1-4 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: | 32 GB (16x2GB DIMMs) |
| Disk Subsystem: | 36GB 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 |

# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

HP Integrity rx4640 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECint_rate2006 = 93.6

SPECint_rate_base2006 = 87.2

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

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

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 8 | 1064 | 73.4 | **1042** | **75.0** | 1033 | 75.7 | 8 | 891 | 87.8 | **882** | **88.6** | 863 | 90.6 |
| 401.bzip2 | 8 | 1026 | 75.3 | **1026** | **75.3** | 1010 | 76.4 | 8 | 1003 | 77.0 | 994 | 77.6 | **994** | **77.6** |
| 403.gcc | 8 | **911** | **70.7** | 903 | 71.3 | 911 | 70.7 | 8 | **856** | **75.2** | 856 | 75.2 | 856 | 75.2 |
| 429.mcf | 8 | 698 | 104 | 690 | 106 | **692** | **105** | 8 | 681 | 107 | **675** | **108** | 674 | 108 |
| 445.gobmk | 8 | 927 | 90.5 | **923** | **90.9** | 922 | 91.1 | 8 | 757 | 111 | 758 | 111 | **757** | **111** |
| 456.hmmer | 8 | 367 | 204 | 356 | 209 | **357** | **209** | 8 | 344 | 217 | 343 | 217 | **344** | **217** |
| 458.sjeng | 8 | 1289 | 75.1 | **1295** | **74.8** | 1299 | 74.5 | 8 | **1113** | **87.0** | 1112 | 87.1 | 1117 | 86.6 |
| 462.libquantum | 8 | **4418** | **37.5** | 4418 | 37.5 | 4408 | 37.6 | 8 | 4435 | 37.4 | 4441 | 37.3 | **4441** | **37.3** |
| 464.h264ref | 8 | 1046 | 169 | **1045** | **169** | 1044 | 170 | 8 | 1046 | 169 | **1045** | **169** | 1044 | 170 |
| 471.omnetpp | 8 | 1116 | 44.8 | **1094** | **45.7** | 1092 | 45.8 | 8 | 1041 | 48.0 | 1043 | 47.9 | **1042** | **48.0** |
| 473.astar | 8 | **507** | **111** | 506 | 111 | 513 | 109 | 8 | 492 | 114 | **491** | **114** | 491 | 114 |
| 483.xalancbmk | 8 | 558 | 99.0 | **554** | **99.7** | 553 | 99.8 | 8 | 498 | 111 | **494** | **112** | 494 | 112 |

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
```

## 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
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

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

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

HP Integrity rx4640 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECint_rate2006 = 93.6

SPECint_rate_base2006 = 87.2

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

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

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.
Report generated on Tue Jul 22 10:06:46 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 October 2006.