



SPEC[®] CINT2006 Result

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Hewlett-Packard Company

HP Integrity rx3600 (1.66GHz/18MB Dual-Core Intel Itanium)

SPECint[®]_rate2006 = 62.4

SPECint_rate_base2006 = 57.9

CPU2006 license: 03

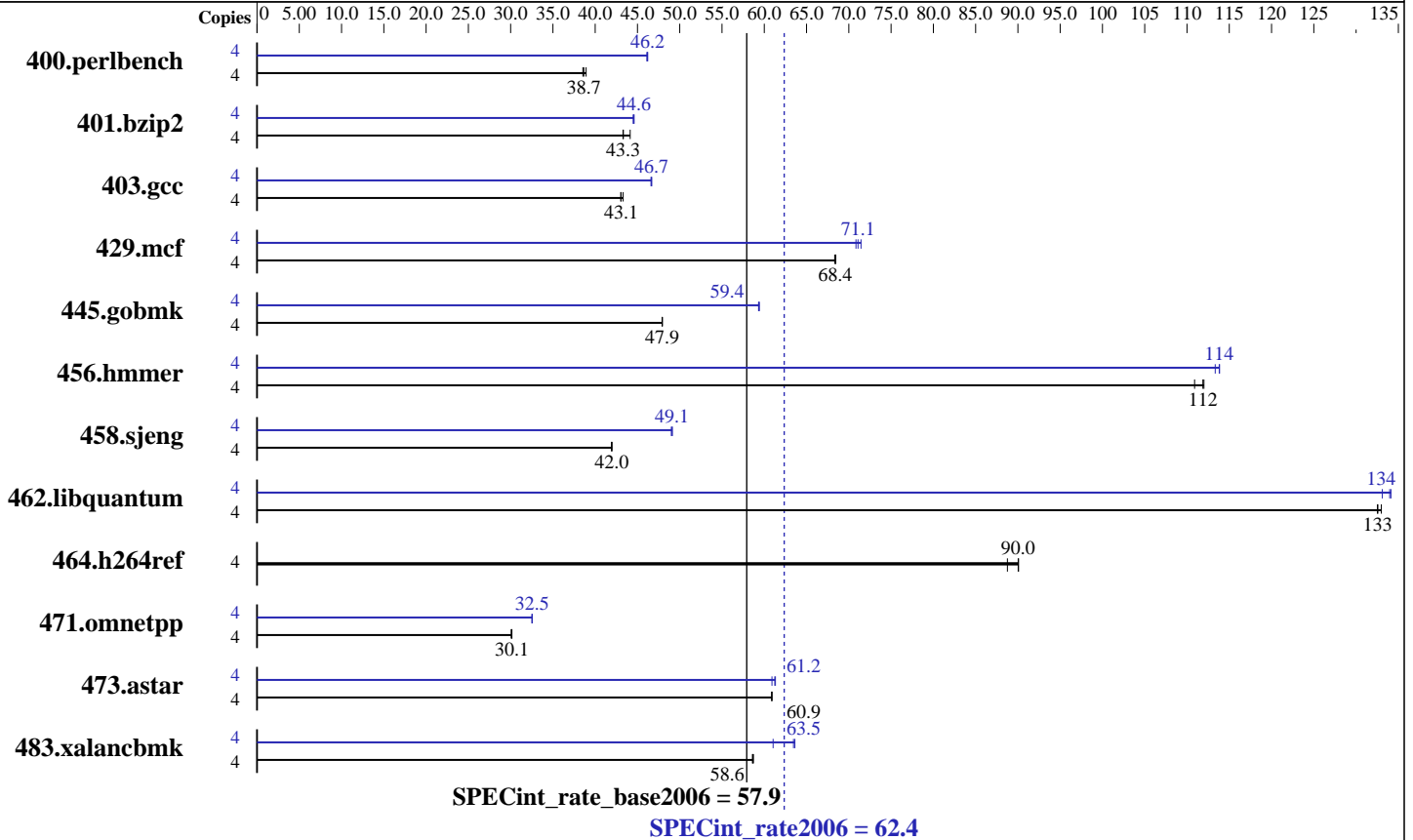
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Sep-2007

Hardware Availability: Nov-2007

Software Availability: Sep-2007



Hardware

CPU Name: Dual-Core Intel Itanium 9140M
 CPU Characteristics: 1.66GHz/18MB, 667MHz FSB
 CPU MHz: 1666
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip, 2 threads/core
 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: 16 GB (8x2GB DIMMs, AD124A 8-DIMM memory carrier)
 Disk Subsystem: 73GB 10K RPM SAS
 Other Hardware: None

Software

Operating System: HPUX11i-MCOE B.11.31 (LR)
 Compiler: HP C/aC++ Developer's Bundle C.11.31.03
 HP Fortran90 Compiler B.11.31.03
 Auto Parallel: No
 File System: vxfs
 System State: Multi-user
 Base Pointers: 32-bit
 Peak Pointers: 32-bit
 Other Software: MicroQuill Smartheap 8.1



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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	4	1004	38.9	1014	38.5	<u>1011</u>	<u>38.7</u>	4	848	46.1	846	46.2	<u>846</u>	<u>46.2</u>
401.bzip2	4	875	44.1	892	43.3	<u>891</u>	<u>43.3</u>	4	868	44.5	866	44.6	<u>866</u>	<u>44.6</u>
403.gcc	4	748	43.0	744	43.3	<u>748</u>	<u>43.1</u>	4	690	46.7	691	46.6	<u>690</u>	<u>46.7</u>
429.mcf	4	534	68.3	533	68.5	<u>533</u>	<u>68.4</u>	4	511	71.4	515	70.8	<u>513</u>	<u>71.1</u>
445.gobmk	4	<u>875</u>	<u>47.9</u>	876	47.9	875	47.9	4	707	59.3	<u>707</u>	<u>59.4</u>	706	59.4
456.hammer	4	<u>334</u>	<u>112</u>	337	111	333	112	4	328	114	<u>328</u>	<u>114</u>	329	113
458.sjeng	4	<u>1153</u>	<u>42.0</u>	1154	41.9	1153	42.0	4	988	49.0	<u>986</u>	<u>49.1</u>	985	49.1
462.libquantum	4	<u>625</u>	<u>133</u>	623	133	625	133	4	<u>619</u>	<u>134</u>	618	134	623	133
464.h264ref	4	<u>983</u>	<u>90.0</u>	997	88.8	983	90.1	4	<u>983</u>	<u>90.0</u>	997	88.8	983	90.1
471.omnetpp	4	829	30.1	832	30.1	<u>829</u>	<u>30.1</u>	4	<u>768</u>	<u>32.5</u>	769	32.5	768	32.6
473.astar	4	<u>461</u>	<u>60.9</u>	461	60.9	461	60.9	4	461	60.9	<u>459</u>	<u>61.2</u>	458	61.3
483.xalancbmk	4	470	58.7	471	58.6	<u>471</u>	<u>58.6</u>	4	<u>435</u>	<u>63.5</u>	434	63.6	452	61.0

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 2007 HP-UX 11i v3 Mission Critical Operating Environment (MCOE) and compilers installed, along with the following patches:

```
PHSS_36349 linker + fdp cumulative patch
PHSS_36351 Math Library Cumulative Patch
PHSS_36352 Integrity Unwind Library
PHSS_36350 aC++ Runtime (A.06.15)
PHSS_36354 assembler patch
```

The following kernel tunables were set, in addition to the defaults set by the Mission Critical OE:

```
maxdsiz=3221225472
maxssiz=401604608
maxrsessiz=41943040
```

Base Compiler Invocation

C benchmarks:
/opt/ansic/bin/cc -Ae

C++ benchmarks:
/opt/aCC/bin/aCC -Aa



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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

/opt/smartheap/SmartHeap_8.1/lib/libsmartheapC.a /opt/smartheap/SmartHeap_8.1/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

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Peak Optimization Flags (Continued)

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
/opt/smartheap/SmartHeap_8.1/lib/libsmartheapC.a /opt/smartheap/SmartHeap_8.1/lib/libsmar

473.astar: +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/opt/smartheap/SmartHeap_8.1/lib/libsmartheapC.a /opt/smartheap/SmartHeap_8.1/lib/libsmar

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
/opt/smartheap/SmartHeap_8.1/lib/libsmartheapC.a /opt/smartheap/SmartHeap_8.1/lib/libsmar

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.07.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.07.xml



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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.1.
Report generated on Tue Jul 22 14:19:14 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 November 2007.